Curriculum Vitae

Andrea Romanino

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Personal Information

Name:	Andrea Romanino
Place of Birth:	Imperia, Italy
Nationality:	Italian
Sex:	

Positions

11/2014–:	Full professor at SISSA, Trieste, Italy
01/2014–:	Scientific consultant for ICTP, Trieste, Italy
04/2005–10/2014:	Associate professor at SISSA
01/2003–03/2005:	CERN Theory Division Fellow and Associate
11/2001–12/2002:	"Ricercatore TD" at the Scuola Normale Superiore, Pisa (resigned to accept CERN offer)
10/2000–11/2001:	Research associate at the Fermi National Accelerator Laboratory, USA
10/1998–09/2000:	Postdoctoral research assistant at the University of Oxford, UK

Fellowships awarded: INFN/Pisa postdoctoral fellowship for theoretical physicists, University of Pisa fellowship for advanced studies abroad, INFN/Genova postgraduate fellowship

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Education

Ph.D. in Physics	University of Pisa, 10/07/1997
Laurea in physics	University of Genova, 05/12/1992, 110/110 "cum laude"

Research Interests

Theory and phenomenology of fundamental interactions. In particular:

- Beyond the Standard Model of particle physics and physics at the Large Hadron Collider (LHC)

- Flavour physics and the origin of masses, neutrino models and phenomenology
- Aspects of astroparticle physics and cosmology (supersymmetric dark matter and baryon asymmetry)

Publications and their impact

- Author of 86 scientific publications, out of which 58 original articles on international refereed journals. List available in Annex.
- Bibliometric data according to Spires (the standard database for particle physics) at 06/06/2019: 2 renowned paper (more than 500 citations), 2 famous papers (more than 250 citations), 5585 citations overall, 94.7 citations per paper, h-index 36.
- Among the "Top Italian Scientist" according to VIA-Academy (based on bibliometric data), see http://www.topitalianscientists.org/.
- The paper "Split Supersymmetry", *Nucl. Phys.* **B699** (2004) 65–89, now with 800+ citations, was identified as "Emerging Research Front" by ESI-Topics, see http://www.esi-topics.com/erf/2005/october05-AndreaRomanino.html.

Scientific responsibilities in research projects

- Coordinator, as Head of the Physics Area (Department) of SISSA, of a proposal funded with 6.635.800 euros over five years (2018–2022) by the Italian Ministry for University and Research to develop a project on "Data Science" within the program "Dipartimenti di Eccellenza" (Excellence Departments). The program aimed at funding selected scientific projects presented by the Departments of Italian universities.
- Coordinator of the SISSA unit of the PRIN 2015 project 2015P5SBHT_002 "Search for the Fundamental Laws and Constituents" (02/2017 to 02/2020).
- Coordinator of the SISSA unit of the PRIN 2008 project 2008XM9HLM "Fundamental interactions in view of the Large Hadron Collider and of astro-particle physics" (03/2010 to 09/2012).
- Scientific coordinator of the European project FP7-PEOPLE-2009-IEF "The physics of flavor in visible and dark sectors" (05/2010 to 01/2011).
- Coordinator of the SISSA sub-unit of the Cofin project "Beyond the Standard Model Physics in the era of the Large Hadron Collider" (02/2007 to 02/2009).

Teaching

- Postgraduate course "Beyond the Standard Model" at SISSA since the academic year 2005/06. Postgraduate courses at the University of Oxford and Pavia.
- 26 series of lectures at international schools of physics. List available in Annex.
- Supervisor of 11 Ph.D. students and 3 master students.
- INFN Fubini prize for the best PhD thesis won in 2010 by my student Robert Ziegler. SISSA prize for the best PhD thesis in Physics won in 2015 by my student David Marzocca.

Referee activities and membership of scientific committees

- Member of the SISSA Medialab Scientific Council from May 30, 2017. SISSA Medialab manages the international journals JHEP, JCAP, JSTAT, JINST.
- Referee for the Vici grant program (1.5 million euros) of the Netherlands Organisation for Scientific Research (NWO), September 2015, see http://www.nwo.nl/.

- Member of the scientific committee of the 2010 edition of the *Consolider-Ingenio Program* of the Spanish Ministry of Science and Innovation, providing five years of funding to research initiatives in all fields of sciences, with grants set at approximately 5 million euros per program and a total budget of about 50 million euros. See http://www.ingenio2010.es/.
- Member of the scientific committee of the 2009 edition of the *Consolider-Ingenio Program* of the Spanish Ministry of Science and Innovation.
- Referee of the 2008 edition of the *Consolider Program* of the Spanish Ministry of Science and Education.
- Referee in 2008 for the *Odysseus Programme* of the Research Foundation Flanders for top scientists to lead a research team. The total value of a project ranges from 2 to 7.5 million euros for a five year period. See http://www.fwo.be/.
- Referee for the selection of research projects at the University of Rome "La Sapienza", the University of Padua, the University of Durham, the Austrian Science Fund (FWF), the Italian Ministry of Research and Education (PRIN).
- Referee for the major international particle physics journals: *Physical Review Letters*, *JHEP*, *Physical Review*, *Nuclear Physics*, *Physics Letters*, *EPJC*, and others.

Conferences

- Organizer of 26 conferences and conference sessions. List available in Annex.
- 69 invited plenary talks at international conferences.
- Overall 179 talks at conferences, schools, universities, and other scientific institutions.

Academic responsibilities

- President of SISSA CUG (committee for equal opportunities and against mobbing and discriminations) from 12/2018
- Member of the SISSA Medialab Scientific Council from May 30, 2017. SISSA Medialab manages the international journals JHEP, JCAP, JSTAT, JINST.
- Coordinator of the Physics Area of SISSA from 05/2016 to 05/2018
- Member of the Senate of SISSA from 05/2012 to 05/2018
- Member of the Board of Directors of SISSA from 11/2007 to 10/2010
- Member of the Board of Directors of SISSA from 12/2005 to 10/2007
- SISSA delegate for research from 07/2011 to 08/2016
- SISSA delegate for e-learning from 07/2006 to 10/2010
- Member of the "Consiglio Direttivo" of the "Consorzio per l'incremento degli studi e delle ricerche dei dipartimenti di fisica dell'università di Trieste" from 06/2011 to 10/2016
- Coordinator of the Astroparticle curriculum at SISSA from 09/2005 to 10/2007

Other academic activities

- Scientific consultant for ICTP from 2014.
- Member of PRIN projects in 2006, 2008, 2010-2011, 2015 (in 2015, 2008, 2006 as local coordinator).
- Team member of the ERC Advanced Grant no. 267985 "DaMESyFla".

- Member of several european networks: Horizon2020 ITN “Elusives” (H2020-MSCA-ITN-2015-674896), Horizon2020 RISE “Invisibles-Plus” (H2020- MSCA-RISE-2015-690575), Horizon2020 TWINN “Twinning for a step forward of the Theoretical Physics Division” Grant RBI-T-WINNING (692194), FP7 ITN “Invisibles” (Marie Curie Actions, PITN- GA-2011- 289442, April 2012–March 2016), FP7 ITN “UNILHC” (Marie Curie Actions, PITN-GA-2009-237920, October 2009–September 2013), FP6 RTN “UniverseNet” (Marie Curie Actions, MRTN-CT-2006-035863), FP6 RTN “Across the energy frontier” (Marie Curie Actions, HPRN-CT-2000-00148).
- Research appointment (“incarico di ricerca”) in the Trieste Section of INFN since 2008.

Annex

Publications

Journals:

- P. Ciafaloni, A. Romanino, and A. Strumia, "Lepton flavor violations in SO(10) with large $\tan\beta$," *Nucl. Phys.* **B458** (1996) 3–22, `hep-ph/9507379`.
- R. Barbieri, A. Romanino, and A. Strumia, "Electric dipole moments as signals of supersymmetric unification," *Phys. Lett.* **B369** (1996) 283–288, `hep-ph/9511305`.
- R. Barbieri, A. Romanino, and A. Strumia, "On axion-mediated macroscopic forces again," *Phys. Lett.* **B387** (1996) 310–314, `hep-ph/9605368`.
- R. Barbieri, L. J. Hall, S. Raby, and A. Romanino, "Unified theories with U(2) flavor symmetry," *Nucl. Phys.* **B493** (1997) 3–26, `hep-ph/9610449`.
- A. Romanino and A. Strumia, "Electric dipole moments from Yukawa phases in supersymmetric theories," *Nucl. Phys.* **B490** (1997) 3–18, `hep-ph/9610485`.
- G. Bhattacharyya and A. Romanino, "Naturalness constraints on gauge-mediated supersymmetry breaking models," *Phys. Rev.* **D55** (1997) 7015–7019, `hep-ph/9611243`.
- R. Barbieri, L. J. Hall, and A. Romanino, "Consequences of a U(2) flavour symmetry," *Phys. Lett.* **B401** (1997) 47–53, `hep-ph/9702315`.
- P. Ciafaloni, A. Romanino, and A. Strumia, "Two-loop QCD corrections to charged-Higgs-mediated $b \to s\gamma$ decay," *Nucl. Phys.* **B524** (1998) 361, `hep-ph/9710312`.
- A. J. Buras, A. Romanino, and L. Silvestrini, "$K \to \pi\nu\bar{\nu}$: A model independent analysis and supersymmetry," *Nucl. Phys.* **B520** (1998) 3, `hep-ph/9712398`.
- L. Giusti, A. Romanino, and A. Strumia, "Natural ranges of supersymmetric signals," *Nucl. Phys.* **B550** (1999) 3, `hep-ph/9811386`.
- R. Barbieri, L. Giusti, L. J. Hall, and A. Romanino, "Fermion masses and symmetry breaking of a U(2) flavour symmetry," *Nucl. Phys.* **B550** (1999) 32, `hep-ph/9812239`.
- R. Barbieri, L. J. Hall, and A. Romanino, "Precise tests of a quark mass texture," *Nucl. Phys.* **B551** (1999) 93, `hep-ph/9812384`.
- K. Dick, M. Freund, M. Lindner, and A. Romanino, "CP-violation in neutrino oscillations," *Nucl. Phys.* **B562** (1999) 29, `hep-ph/9903308`.
- R. Barbieri, P. Creminelli, and A. Romanino, "Neutrino mixings from a U(2) flavour symmetry," *Nucl. Phys.* **B559** (1999) 17, `hep-ph/9903460`.
- A. J. Buras, G. Colangelo, G. Isidori, A. Romanino, and L. Silvestrini, "Connections between ϵ'/ϵ and rare kaon decays in supersymmetry," *Nucl. Phys.* **B566** (2000) 3, `hep-ph/9908371`.
- A. Romanino, "Measuring CP-violation with a neutrino factory," *Nucl. Phys.* **B574** (2000) 675, `hep-ph/9909425`.
- A. Romanino and A. Strumia, "Are heavy scalars natural in minimal supergravity?," *Phys. Lett.* **B487** (2000) 165, `hep-ph/9912301`.
- M. Freund, M. Lindner, S. T. Petcov, and A. Romanino, "Testing matter effects in very long baseline neutrino oscillation experiments," *Nucl. Phys.* **B578** (2000) 27, `hep-ph/9912457`.
- A. Lukas and A. Romanino, "A brane-world explanation of the KARMEN anomaly," `hep-ph/0004130`.

- A. Blondel *et al.*, "The neutrino factory: Beam and experiments," *Nucl. Instrum. Meth.* **A451** (2000) 102–122.
- A. Lukas, P. Ramond, A. Romanino, and G. G. Ross, "Solar neutrino oscillation from large extra dimensions," *Phys. Lett.* **B495** (2000) 136–146, `hep-ph/0008049`.
- A. Lukas, P. Ramond, A. Romanino, and G. G. Ross, "Neutrino masses and mixing in brane-world theories," *JHEP* **04** (2001) 010, `hep-ph/0011295`.
- R. G. Roberts, A. Romanino, G. G. Ross, and L. Velasco-Sevilla, "Precision test of a fermion mass texture," *Nucl. Phys.* **B615** (2001) 358–384, `hep-ph/0104088`.
- A. Masiero, M. Piai, A. Romanino, and L. Silvestrini, "Signals of supersymmetric flavor models in B physics," *Phys. Rev.* **D64** (2001) 075005, `hep-ph/0104101`.
- C. Ankenbrandt, G. Barenboim, M. Carena, J. Carpenter, W. Chou, *et al.*, "Physics Study Group report on physics potential at FNAL with stronger proton sources,".
- A. Romanino and A. Strumia, "Electron and muon electric dipoles in supersymmetric scenarios," *Nucl. Phys.* **B622** (2002) 73–94, `hep-ph/0108275`.
- T. Adams *et al.*, "E1 working group summary: Neutrino factories and muon colliders," *eConf* **C010630** (2001) E1001, `hep-ph/0111030`.
- M. Campanelli and A. Romanino, "Effects of new physics in neutrino oscillations in matter," *Phys. Rev.* **D66** (2002) 113001, `hep-ph/0207350`.
- G. Cacciapaglia, M. Cirelli, Y. Lin, and A. Romanino, "Bulk neutrinos and core collapse supernovae," *Phys. Rev.* **D67** (2003) 053001, `hep-ph/0209063`.
- M. Apollonio *et al.*, "Oscillation physics with a neutrino factory," `hep-ph/0210192`.
- R. Barbieri, T. Hambye, and A. Romanino, "Natural relations among physical observables in the neutrino mass matrix," *JHEP* **03** (2003) 017, `hep-ph/0302118`.
- G. Cacciapaglia, M. Cirelli, and A. Romanino, "Signatures of supernova neutrino oscillations into extra dimensions," *Phys. Rev.* **D68** (2003) 033013, `hep-ph/0302246`.
- A. Romanino, "Charged lepton contributions to the solar neutrino mixing and θ_{13}," *Phys. Rev.* **D70** (2004) 013003, `hep-ph/0402258`.
- G. F. Giudice and A. Romanino, "Split Supersymmetry," *Nucl. Phys.* **B699** (2004) 65–89, `hep-ph/0406088`.
- N. Arkani-Hamed, S. Dimopoulos, G. F. Giudice, and A. Romanino, "Aspects of split supersymmetry," *Nucl. Phys.* **B709** (2005) 3–46, `hep-ph/0409232`.
- G. F. Giudice and A. Romanino, "Electric dipole moments in split supersymmetry," *Phys. Lett.* **B634** (2006) 307–314, `hep-ph/0510197`.
- L. Ferretti, S. F. King, and A. Romanino, "Flavour from accidental symmetries," *JHEP* **11** (2006) 078, `hep-ph/0609047`.
- **ISS Physics Working Group** Collaboration, A. Bandyopadhyay *et al.*, "Physics at a future Neutrino Factory and super-beam facility," *Rept.Prog.Phys.* **72** (2009) 106201, `0710.4947`.
- M. Raidal, A. van der Schaaf, I. Bigi, M. Mangano, Y. K. Semertzidis, *et al.*, "Flavour physics of leptons and dipole moments," *Eur.Phys.J.* **C57** (2008) 13–182, `0801.1826`.
- M. Frigerio, P. Hosteins, S. Lavignac, and A. Romanino, "A New, direct link between the baryon asymmetry and neutrino masses," *Nucl.Phys.* **B806** (2009) 84–102, `0804.0801`.
- L. Calibbi, L. Ferretti, A. Romanino, and R. Ziegler, "Consequences of a unified, anarchical model of fermion masses and mixings," *JHEP* **0903** (2009) 031, `0812.0087`.
- L. Calibbi, L. Ferretti, A. Romanino, and R. Ziegler, "Gauge coupling unification, the GUT scale, and magic fields," *Phys.Lett.* **B672** (2009) 152–157, `0812.0342`.

- G. F. Giudice, M. Nardecchia, and A. Romanino, "Hierarchical Soft Terms and Flavor Physics," *Nucl.Phys.* **B813** (2009) 156–173, 0812.3610.
- M. Nardecchia, A. Romanino, and R. Ziegler, "Tree Level Gauge Mediation," *JHEP* **0911** (2009) 112, 0909.3058.
- L. Calibbi, M. Frigerio, S. Lavignac, and A. Romanino, "Flavour violation in supersymmetric SO(10) unification with a type II seesaw mechanism," *JHEP* **0912** (2009) 057, 0910.0377.
- M. Nardecchia, A. Romanino, and R. Ziegler, "General Aspects of Tree Level Gauge Mediation," *JHEP* **1003** (2010) 024, 0912.5482.
- D. Marzocca, S. T. Petcov, A. Romanino, and M. Spinrath, "Sizeable θ_{13} from the Charged Lepton Sector in SU(5), (Tri-)Bimaximal Neutrino Mixing and Dirac CP Violation," *JHEP* **1111** (2011) 009, 1108.0614.
- M. Monaco, M. Nardecchia, A. Romanino, and R. Ziegler, "Extended Tree-Level Gauge Mediation," *JHEP* **1110** (2011) 022, 1108.1706.
- F. Caracciolo and A. Romanino, "Simple and direct communication of dynamical supersymmetry breaking," *JHEP* **1212** (2012) 109, 1207.5376.
- D. Marzocca, S. Petcov, A. Romanino, and M. Sevilla, "Nonzero $|U_{e3}|$ from Charged Lepton Corrections and the Atmospheric Neutrino Mixing Angle," *JHEP* **1305** (2013) 073, 1302.0423.
- M. Monaco, M. Pierini, A. Romanino, and M. Spinrath, "Phenomenology of Minimal Unified Tree Level Gauge Mediation at the LHC," *JHEP* **07** (2013) 078, 1302.1305.
- L. Di Luzio, M. Nardecchia, and A. Romanino, "A framework for baryonic R-parity violation in grand unified theories," *Phys.Rev.* **D88** (2013) 115008, 1305.7034.
- D. Marzocca and A. Romanino, "Stable fermion mass matrices and the charged lepton contribution to neutrino mixing," *JHEP* **11** (2014) 159, 1409.3760.
- A. Andreazza *et al.*, "What Next: White Paper of the INFN-CSN1," *Frascati Phys. Ser.* **60** (2015) 1–302.
- L. Aparicio, A. Azatov, E. Hardy, and A. Romanino, "Diphotons from Diaxions," *JHEP* **05** (2016) 077, 1602.00949.
- P. Baratella, J. Elias-Miro, J. Penedo, and A. Romanino, "A closer look to the sgoldstino interpretation of the diphoton excess," *JHEP* **06** (2016) 086, 1603.05682.
- V. Domcke and A. Romanino, "Stable lepton mass matrices," *JHEP* **06** (2016) 031, 1604.08879.
- Y. Reyimuaji and A. Romanino, "Can an unbroken flavour symmetry provide an approximate description of lepton masses and mixing?," *JHEP* **03** (2018) 067, 1801.10530.

Proceedings

- A. Romanino, "Electric dipole moments in supersymmetric theories," *Surveys High Energ. Phys.* **10** (1997) 383, hep-ph/9604361.
- R. Barbieri, A. Romanino, and L. J. Hall, "An SU(5)×U(2) theory of fermion masses and mixings," *Nucl. Phys. Proc. Suppl.* **52A** (1997) 141–147.
- A. Romanino, "Unified theories of flavour with U(2) as horizontal group," in *Masses of fundamental particles: Cargese 1996*, M. Levy, J. Iliopoulos, R. Gastmans, and J.-M. Gerard, eds., vol. 363 of *NATO ASI Series B, Physics*. Plenum Press, 1997.
- R. Barbieri, L. J. Hall, and A. Romanino, "Flavour physics, flavor symmetries, supersymmetry and unification," *Nucl. Phys. Proc. Suppl.* **59** (1997) 217–222.
- R. Barbieri, L. J. Hall, and A. Romanino, "Signals of Flavour Physics from Supersymmetry," in *Flavor-Changing Neutral Currents: Present and Future Studies*, D. B. Cline, ed. World Scientific, 1997.

- G. Bhattacharyya and A. Romanino, "Naturalness in gauge-mediated supersymmetry breaking scenario," in *Proceedings of the XXXIInd Rencontres de Moriond: Electroweak Interactions and Unified theories*, J. Tran Thanh Van, ed. Éditions Frontières, 1997.
- A. Romanino, "Phenomenological analysis of a quark mass texture," in *Proceedings of the European Network Meeting On Physics Beyond The Standard Model*, I. Antoniadis, A. Masiero, and S. Pastor, eds., JHEP conference proceedings. SISSA, Trieste, Italy, Feb., 1999.
- A. Romanino, "Tests of quark mass textures," in *Proceedings of the XXXIVth Rencontres de Moriond: Electroweak Interactions and Unified theories.* 1999.
- A. Romanino, "CP-violation in neutrino oscillations." Proceedings of the *XIth Rencontres de Blois: Frontiers of Matter*, Blois, France, June 27–July 3, 1999.
- A. Romanino, "Experimental implications of leptonic CP-violation," *Nucl. Instrum. Meth.* **A451** (2000) 42–50.
- M. Freund, M. Lindner, S. T. Petcov, and A. Romanino, "Very long baseline neutrino oscillation experiments and the MSW effect," *Nucl. Instrum. Meth.* **A451** (2000) 18–35.
- K. Dick, M. Freund, M. Lindner, and A. Romanino, "CP-violation in neutrino oscillations: Theory,". Prepared for 6th SFB-375 Ringberg Workshop: Astroteilchenphysik, Ringberg Castle, Tegernsee, Germany, 11-15 Oct 1999.
- M. Freund, K. Dick, M. Lindner, and A. Romanino, "Phenomenological analysis of CP-violation in neutrino oscillation experiments,". Prepared for 6th SFB-375 Ringberg Workshop: Astroteilchenphysik, Ringberg Castle, Tegernsee, Germany, 11-15 Oct 1999.
- A. Romanino, "Tests of quark mass textures," *Int. J. Mod. Phys.* **A16S1B** (2001) 576–578.
- A. Lukas, P. Ramond, A. Romanino, and G. G. Ross, "Brane-bulk neutrino oscillations," *Int. J. Mod. Phys.* **A16S1C** (2001) 934–936.
- M. Campanelli and A. Romanino, "Effects of new physics in neutrino oscillations in matter," *J. Phys.* **G29** (2003) 1861–1864.
- A. Romanino, "Ignoring the hierarchy problem,". Prepared for 19th Rencontres de Physique de la Vallee d'Aoste: Results and Perspectives in Particle Physics, La Thuile, Aosta Valley, Italy, 27 Feb–5 Mar 2005.
- A. Romanino, "Scenarios for LHC physics,". Prepared for the IV Workshop Italiano sulla Fisica di ATLAS e CMS, Bologna, Italy, 23–25 Nov 2006.
- A. Romanino, "LHC and neutrino physics,". Prepared for the 12th International Workshop on Neutrinos Telescopes: Twenty Years after the Supernova 1987A Neutrino Bursts Discovery.
- A. Romanino, "Leptogenesis with type II seesaw in SO(10)," *Nucl.Phys.Proc.Suppl.* **188** (2009) 332–335.
- G. F. Giudice, M. Nardecchia, and A. Romanino, "SUSY contributions to ϕ_{B_s} from hierarchical sfermions," *J.Phys.Conf.Ser.* **171** (2009) 012059.
- A. Romanino, "The Standard model of particle physics," *Izvestiya Vuzov. Fizika.* **53** (2009) 3–19.
- A. Romanino, "A split SM embedding in SO(10), minimal type-II seesaw, and tree-level gauge mediation,". Prepared for the Proceedings of the *BUE-CTP International Conference on Neutrino Physics in the LHC Era*, Luxor, Egypt, November 15–19, 2009.
- A. Romanino, "Neutrino Physics," in *2010 European School of High-Energy Physics*, C. Grojean and M. Spiropulu, eds., CERN Yellow Reports. 2012. `1201.6158`.
- A. Romanino, "Naturalness After LHC run I," *Frascati Phys. Ser.* **61** (2016) 26–34.
- A. Romanino, "A bottom up determination of lepton mass matrices," *Nucl. Part. Phys. Proc.* **285-286** (2017) 14–19.

- A. Romanino and Y. Reyimuaji, "General considerations on lepton mass matrices," *PoS* **CORFU2017** (2018) 024.
- A. Romanino, "Unbroken flavour symmetries vs lepton masses and mixings," *PoS* **NOW2018** (2019) 074.

Courses and lectures

- "Physics Beyond the Standard Model", postgraduate course at SISSA, since the academic year 2005-2006.
- "Introduction to supersymmetry", postgraduate mini-course at SISSA, since the academic year 2005-2006.
- "Physics beyond the Standard Model", postgraduate course held at the University of Pavia.
- Second part of the postgraduate lecture course "SUSY and Beyond" at the University of Oxford, Trinity term 2000 ("Essential theory").
- Lectures on "Neutrinos" within the postgraduate course on supersymmetry at the University of Oxford, Trinity term 1999.
- "Theory of lepton mixing", series of lectures at the *LNF Spring School*, Frascati, Italy, May 19–23, 2003.
- "Electroweak physics at the LHC", series of lectures at the Italo-Hellenic School of Physics 2005 *The Physics of LHC: Theoretical tools and experimental challenges*, Martignano, Lecce, Italy, June 9–14, 2005.
- "Flavor and neutrinos", series of lectures at the *XIV Seminario Nazionale di Fisica Teorica*, Parma, Italy, August 29–September 9, 2005.
- "Split Supersymmetry", series of lectures at the *19'th Nordic Particle Physics Meeting (Spåtind 2006)*, Spåtind, Norway, January 4–10, 2006.
- "Supersymmetric extension of the Standard Model", series of lectures at the *Parma International School of Theoretical Physics (SNFT07)*, Parma, Italy, September 3–8, 2007.
- "Theory of neutrino masses", series of lectures at the *III International Pontecorvo Neutrino Physics School*, Alushta, Crimea, Ukraine, September 16–26, 2007.
- "Theory of neutrino masses", series of lectures at the Joint Institute for Nuclear Research (JINR), Dubna, Russia, November 4–17, 2007.
- "Supersymmetry", lectures at the *Baikal summer JINR-ISU school*, Bol'shie Koty, Russia, July 20–27, 2008.
- "Neutrino masses", lectures at the *Baikal summer JINR-ISU school*, Bol'shie Koty, Irkutsk, Siberia, Russia, July 20–27, 2008.
- "(Lepton) Flavor Violation as signal for new physics", lectures held at the *XIV LNF Spring School "Bruno Touschek" in Nuclear, Subnuclear and Astroparticle Physics*, INFN National Laboratories in Frascati, Frascati, Italy, May 11–15, 2009.
- "The Standard Model of Particle Physics", lectures at the *International Baikal Summer School on Physics of Elementary Particles and Astrophysics*, Bol'shie Koty, Lake Baikal, Irkutsk, Siberia, Russia, July 23–30, 2009.
- "Neutrino Physics", lectures held at the *2010 European School of High-Energy Physics (ESHEP2010)*, Raseborg, Finland, Jun2 20–July 3, 2010.
- "Neutrino Physics", lectures held at CERN's *Summer Student Lecture Programme*, CERN, Switzerland, July 5–August 20, 2010.
- "Supersymmetry", lectures given at the *3rd Winter School Geometry and Physics*, CP^3 origins, Odense, Denmark, November 1–5, 2010.

- "Neutrino Physics", 3 lectures held on August 3, 4, 5, 2011 at the *CERN Summer Student Program*, CERN, Switzerland, July 4–August 19, 2011.
- "BSM physics", 5 lectures held at the LHCPhenoNet Winter School 2012, Ascona, Switzerland, January 22–29, 2012.
- "The Standard Model and Beyond", 6 lectures at the *BUSSTEPP 2012* Summer School, Durham University, Durham, UK, September 2–14, 2012.
- "The Standard Model and Beyond", 5 lectures at the *BUSSTEPP 2013* Summer School, University of Sussex, Brighton, UK, September 1–13, 2013.
- "Physics beyond the Standard Model: Supersymmetry and composite Higgs", 4 lectures at the "Training Week" of the *Prospects and Precision at the Large Hadron Collider at 14 TeV*, Galileo Galilei Institute for Theoretical Physics (GGI), Florence, September 29–October 3, 2014.
- "Beyond the Standard Model", 6 hour lectures at the *IPM school and conference on Particle Physics (IPP15): Neutrino physics, dark matter and B-physics*, IPM, Teheran, Iran, September 22–27, 2015.
- "The 750 GeV excess and the LHC challenge", lecture at the *16th international scientific Baikal Summer School on Physics of Elementary Particles and Astrophysics*, Bol'shie Koty, Russia, July 8–15, 2016.
- "The Standard Model and Beyond", 4 lectures (6 hours) at the *First Colima Winter School on High Energy Physics and DCPIHEP 2017 workshop: Model Building Beyond the Standard Model*, Colima, Mexico, January 4–18, 2017.
- "Selected topics on the Standard Model and beyond", 3 lectures (6 hours) in the context of the "Twinning Lectures" series at the Ruđer Bošković Institute, Zagreb, May 15–17, 2017.
- "Beyond the Standard Model, including Neutrinos", 3 lectures (3 hours) at the *First International High Energy Physics School in Western China*, Lanzhou University-IMP, Lanzhou, China, August 1–10, 2018.
- "The Standard Model of particle physics", 4 lectures (5 hours) given at the *Sarajevo School of High Energy Physics 2018 (SSHEP 2018)*, University of Sarajevo, Bosnia and Herzegovina, October 15–20, 2018.
- "Introduction to the Standard Model", 3 lectures (4 hours) at the *Balkan School on High Energy and Particle Physics: Theory and Phenomenology (BS2019)*, Ioannina, Greece, June 3–10, 2019.

Conferences and conference sessions organized

- Convenor of the "Neutrino Oscillations from pi, mu and reactor beams" group in the E1 Working Group on Neutrino Factories and Muon Colliders and organizer of the common session with the P2 Working Group on Flavor Physics at *Snowmass 2001 — the future of particle physics*, Snowmass Village, Colorado, June 30–July 21, 2001.
- Convenor of the "New Physics" session at the *Incontri sulla Fisica delle Alte Energie (IFAE Parma 2002)*, Parma, Italy, April 3–5, 2002. Summary talk of the session.
- Convenor of the "Neutrinos" session at the *32nd Conference on High Energy Physics (ICHEP 04)*, Beijing, China, August 16–22, 2004.
- Convenor of the "New Physics" session at *IFAE*, Catania, Italy, March 30–April 2, 2005.
- Organizer of the meeting of the *ENTApP Visitor Programme and Workshop on Dark Matter* held at SISSA, Trieste, October 12–21, 2005.
- Member of the Scientific Board of the *Workshop sui Monte Carlo, la Fisica e le simulazioni a LHC*, LNF, Frascati, Italy, 2006–2007.
- Convenor ot the "Flavour Physics and CP Violation" session at *The 2007 Europhysics Conference on High Energy Physics (EPS HEP 2007)*, Manchester, England, July 19–25, 2007.

- Organizer of the *Joint ICTP-INFN-SISSA Conference: Topical Issues in LHC Physics*, ICTP, Trieste, Italy, June 29–July 2, 2009.
- Organizer of the *Parma International School of Theoretical Physics*, University of Parma, Parma, Italy, August 31–September 4, 2009.
- Convener of the "Lepton flavour and lepton number violation" session of the 3$^{\rm rd}$ general meeting of the *Interplay of Collider and Flavour Physics* workshop, CERN, Geneva, Switzerland, December 14–16, 2009.
- Organizer of the GGI workshop *Interpreting LHC Discoveries*, Galileo Galilei Institute for Theoretical Physics (GGI), Florence, October 31–November 25, 2011.
- Organizer of the *Interpreting LHC Discoveries* Conference, in the context of the workshop with the same name, Galileo Galilei Institute for Theoretical Physics (GGI), Florence, November 8–11, 2011.
- Organizer of the meeting of the ERC project *Electroweak Symmetry Breaking, Flavour and Dark Matter: One Solution for Three Mysteries (DaMeSyFla)*, SISSA, Trieste, Italy, February 3, 2012.
- Organizer (and member of the Advisory Committee) of the *1st Conference on Charged Lepton Flavor Violation*, Lecce, Italy, May 6–8 2013.
- Organizer of the *School on Supersymmetry and Unification of Fundamental Interactions (Pre-SUSY 2013)*, ICTP, Trieste, Italy, August 20–23, 2013.
- Organizer of *SUSY 2013, 21st International Conference on Supersymmetry and Unification of Fundamental Interactions* conference, ICTP, Trieste, Italy, August 26–31, 2013.
- Organizer of the *Electroweak symmetry breaking, flavour and dark matter after the Higgs discovery* conference (mid-term meeting of the ERC project "Electroweak Symmetry Breaking, Flavour and Dark Matter: One Solution for Three Mysteries" (DaMeSyFla)), Galileo Galilei Institute for Theoretical Physics (GGI), Florence, Italy, December 16–18, 2013.
- Convenor of the working group on Physics Beyond the Standard Model for the INFN activity "What Next" (including the meeting in Rome on April 7–8, 2014), from February 2014.
- Organizer of the *DaMeSyFla: CP Violation 50 years after discovery* meeting, SISSA, Trieste, September 22-23, 2014.
- Organizer of the *Summer School on Particle Physics*, ICTP, Trieste, Italy, June 15–26, 2015.
- Organizer of the *Pascos 2015* conference, ICTP, Trieste, Italy, June 29–July 3, 2015.
- Organizer of the *DaMESyFla in the Higgs Era* conference, SISSA, Trieste, Italy, March 15–17 2017.
- Organizer of *IFAE 2017* conference ("XVI Incontri di Fisica delle Alte Energie"), University of Trieste, Trieste, Italy, April 19–21, 2017.
- Organizer of the *Summer School on Particle Physics*, ICTP, Trieste, Italy, June 5–16, 2017.
- Organizer of the *First Joint ICTP-Trieste/ICTP-SAIFR School on Particle Physics*, ICTP-SAIFR/IFT-UNESP, São Paulo, Brazil, June 18–29, 2018.
- Organizer of the *Summer School on Particle Physics*, ICTP, Trieste, Italy, June 10–21, 2019.

CURRICULUM VITÆ
Enrico NARDI

Personal Records

- **Nationality:** Italian.
- **Codice Fiscale:** NRDNRC55T23F205B
- **Languages:** Italian, English, Spanish, French.
- **ORCID iD:** 0000-0001-7165-3808.
- **Mailing address:** INFN - Laboratori Nazionali di Frascati
  Via Enrico Fermi no. 40, 00044 Frascati (RM) Italy

E–mail: `enrico.nardi@lnf.infn.it`

Synopsis and highlights of scientific activity

Five papers single authored already during Ph.D./first postdoc (1990-1993). More than 50 co-authors, mostly international. Original contributions in: LEP physics, GUT models $[SU(5), SO(10), E_6]$, B-physics, SUSY without R-parity, neutrino physics (mass models, form factors, non-standard ν interactions, ν's from supernova and pulsars), flavour symmetries, leptogenesis, dark matter, axion physics and dark sectors. More than 4,000 citations to refereed articles with five or less authors . Total of 70 refereed journal articles [average: 60 citations/article], h: 28. Supervision: 7 postdocs; 5 Ph.D., 4 M.Sc., 2 B.Sc. thesis. Chair of 18 international workshops/conferences/schools. Coordinator of the LNF Theory Group. Referee of CSN4 Linea 5 (Astroparticle physics). Local Responsible of CSN4 IS on Theoretical Astroparticle Physics (TAsP).

Academic Education and Working Experience

Academic Education

1987: Degree in Theoretical Physics, University of Trieste, (110/110 *cum laude*)
1989: Master in Elementary Particle Physics, SISSA-ISAS, Trieste (30/30 *cum laude*)
1990: *Research Associate* in the Program for Advanced Graduate Student, CERN (CH)
1991: Ph. D in Elementary Particle Physics, SISSA-ISAS, Trieste

Postgraduate and working experience

1991-1994: Post-doctoral fellow, University of Michigan – Ann Arbor, (USA).
1994-1997: Research fellow, Feinberg Graduate School, Weizmann Institute of Science (IL)
1997-2009: Professor of Physics, Postgraduate program, University of Antioquia (CO)
2001-2008: INFN Researcher (level 3) - Laboratori Nazionali di Frascati (RM)
2009-2019 INFN Primo Ricercatore (level 2) - Laboratori Nazionali di Frascati (RM)
2010-2011: Visiting professor in the Master Program, Madrid Autonoma University & Institute for Theoretical Physics, Madrid (ES)
2018-2024: Italian ASN: "Abilitazione a professore di prima fascia, settore 02/A2" (with all required indicators well above the reference thresholds).

Present position

Since 01/01/2019: INFN Dirigente di Ricerca (level 1) - Laboratori Nazionali di Frascati (RM)

Scientific leadership, institutional assignments and development

1999-2008: Head of the particle physics group GFIF, U. Antioquia (CO)
2002-present: Local responsible INFN "Iniziativa Specifica" TAsP (previously FA51)
2009-2011: Member of the LNF Selection Committee for "Assegni di Ricerca"
2011: Member of the INFN selection committee for INFN Postdoctoral Fellowships for non Italian citizens for the CSN4 IS FA51
2014-2017: Local LNF responsible for PRIN-2012 in Theoretical Astroparticle Physics
2015-2019: Coordinator of the Theory Group of the Frascati National Laboratories
2015-present: Internal referee for Astroparticle Theory (Linea 5) within the INFN CSN4
2016: President of the INFN selection committee for INFN Postdoctoral Fellowships for non Italian citizens for the INFN IS: TAsP
2017: President of the selection committee for LNF Summer Students (call n. 18789/17)
2017-present: Associated member of the European Organization for Nuclear research (CERN)
2019-present: Coordinator of the Theory Group of the Frascati National Laboratories

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Early experience gained abroad, in developing the first Ph. D. program in theoretical particle physics in the Antioquia Department (CO) at the University of Antioquia, teaching a different course each semester to make up for the initial lack of sufficiently trained professors, setting up a HEP group with funding from several governmental and University grants, organizing international HEP schools, conferences and workshops in that country.

Scientific output and metrics (inSPIRE Database

- 72 articles in refereed international journals (67 with 5 or less authors, 8 single-authored)
- more than 4,300 citations (more than 4,000 citations to articles with four or less authors)
- average citations per paper: 60
- h-index: 30
- 90 citable papers (including proceedings and reports), with about 5000 citations

Awards

1989: *"Fondazione Della Riccia"* fellowship at the " Laboratoire de Physique Mathématique de l' Université de Languedoc ", Montpellier (FR)
2003-present: European member in the International Scientific Committee of the *"Latin American Symposium of High Energy Physics"*
2017: Highlight as a Physics Review Letters Editors' Suggestion for the article *"Redefining the axion window"* by L. Di Luzio, F. Mescia and E. Nardi [Phys. Rev. Lett. 118, 031801 (2017)]"Due to its particular importance, innovation, and broad appeal"
2018: Awarded a María de Maeztu grant for visiting scientists at the Institut de Ciències del Cosmo, Universitat de Barcelona
2018 Awarded a Simons Foundation grant for visiting scientist at the Aspen Center for Physics, CO (USA), (forthcoming)

Grants & Research Projects

1998-2000: *"Study of rare B meson decays for testing the standard electroweak theory and constraining of new physics"*. Funding agency: Colciencias (CO) (50,000 eu. - 5 pers.)

1999-2001: *"Neutrino Oscillations in High Density Matter"*. Funding agency: Comité de Investigaciones, UdeA (CO) (10,000 eu. - 3 pers.)

2001-2002: *"Neutrino masses and mixings in supersymmetry without R-parity"*. Funding agency: : Comité de Investigaciones, UdeA (CO) (5,000 eu. - 3 pers.)

2004-2006: *"Computing Yukawa couplings in* $SU(5) \times U(1)$*"*. Funding agency: Comité de Investigaciones, UdeA (CO) (10,000 eu. - 3 pers.)

2004-2006: *"Searching for sub eV-scale neutrino masses using supernova neutrinos"*, Funding agency: Colciencias (CO) (30,000 eu. - 4 pers.)

2005-2006: *"Sostenibilidad"* - Project for strengthen and develop the *Grupo de Fenomenologia de las Interacciones Fundamentales (GFIF) - UdeA"*, Funding agency: Comité de Investigaciones, UdeA (CO) (30,000 eu. - 10 pers.)

2006-2007: *"Flavor Effects in Leptogenesis and Neutrino Physics"*. Funding agency: Colciencias (CO) (50,000 eu. - 10 pers.)

2002-present *INFN CSN4 Iniziativa Specifica on Astroparticle Physics:* TAsP. LNF local coordinator (non-competitive basis grant).

2010-2011: INFN-MICINN ACI2009-1038 grant for collaboration between LNF and the U. of Barcelona. Research Project: *"Low scale leptogenesis"* (8,000eu. - 4 pers.)

2014-2017: *PRIN-2012: Theoretical Astroparticle Physics*, local coordinator (for LNF and U. Rome 1 groups).

2018-2018: ICCUB-Maria de Maeztu Grant for for visiting scientists at ICCUB (2,500eu.)

2019-2019: ICCUB-Maria de Maeztu Grant for for visiting scientists at ICCUB (1,000eu.)

Recent talks and invitations

Recent invited talks at International Conferences/Workshops (triennium 2016-2018 only)

2019 (Plenary) *"QCD Axions off the beaten tracks"*
15th PATRAS workshop on Axions, Wimps and Wisps, Freiburg (D) (*June 3-7, 2019*)

2018 (Plenary) *"Understanding the origin of the Baryon asymmetry of the Universe"*
Aspen Center for Physics, Aspen, CO (*August 26 - September 16, 2018)*

2017 (Plenary) *"New Directions in Dark Matter and Neutrino Physics"*
Perimeter Institute for Theoretical Physics, Waterloo, ON (CA)

2017 (Plenary) CERN-EPFL-Korea Theory Institute *"New Physics at the Intensity Frontier"* CERN, Geneva (CH)

2017 (Plenary) *"2nd ComHEP: Colombian Meeting on High Energy Physics"* UNAL, Bogota

2016 (Plenary) *"1st ComHEP: Colombian Meeting on High Energy Physics"* ITM, Medellin (CO)

2016 (Parallel) *"11th Latin American Symposium on High Energy Physics"* Antigua, (GT)

2016 (Parallel) *"TeV Partilce Astrophysics"* (TeVPA), CERN (CH)

2016 (Plenary) 2016 MIAPP programme *"Why is there more Matter than Antimatter in the Universe?"* Munich, (D)

2016 (Plenary) ERC-Grant workshop *"Towards the Construction of the Fundamental Theory of Flavour"* MIAPP, Munich (D)

2016 (Plenary) *"6th International Workshop on High Energy Physics in the LHC era"* Universidad Técnica Federico Santa María, Valparaiso (CL)

Recent invitations (2016-2019 only)

2019 Working Group Leader *"Landscape of Axion models":* Aspen Center for Physics, (USA)
2019 Visiting scientists at the Institut de Ciències del Cosmo, Universitat de Barcelona
2018 Aspen Center for Physics, CO (USA)
2018 Visiting scientists at the Institut de Ciències del Cosmo, Universitat de Barcelona
2017 Visiting researcher, CERN Theory Group, Geneva (CH)
2017 Visiting scientist, Perimeter Institute for Theoretical Physics, Waterloo, ON (CA)
2017 Invited participant, CERN-EPFL-Korea Theory Institute, CERN, Geneva (CH)
2016 Munich Institute for Astro- and Particle Physics, MIAPP, Munich (D)

Coordinator of International Cooperation Agreements:

2001-2002 *Cooperation Agreement:* Physics Institute, Antioquia U. (CO) & International Center for Relativistic Astrophysics (ICRA) (Rome - Italy)

2001-2002 *Cooperation Agreement:* Physics Institute, Antioquia U. (CO) & University of Valencia (Spain) (2001-02). Funding Agencies: COLCIENCIAS (Colombia) & CSIC (Spain).

2002-2007: *Federation Arrangement:* Abdus Salam International Centre for Theoretical Physics (Trieste - Italy) & Physics Institute, Antioquia U. (CO)

Organization of Scientific Events

Chair of Conferences, Workshops and Schools

2019: Chair: LNF Summer Institute on *"Flavour anomalies in B decays, light dark matter from hidden sectors and lepton dipole moments"*
`https://agenda.infn.it/conferenceDisplay.py?confId=19324`

2019: Chair: LNF Spring Institute on *" The importance of being light: Axions, Nambu-Goldstone Bosons, and Vector Bosons in the Dark"*
`https://agenda.infn.it/conferenceDisplay.py?confId=19200`

2019: Chair: LNF Winter Institute on *"Axions in Astrophysics and Cosmology"*
`https://agenda.infn.it/conferenceDisplay.py?confId=17880`

2018: Chair: LNF Summer Institute on *"Flavor Physics, axion phenomenology and dark sectors"*
`https://agenda.infn.it/conferenceDisplay.py?confId=15950`

2017: Chair: 6th Rome Joint Workshop *"Weird Theoretical Ideas"*
`https://agenda.infn.it/conferenceDisplay.py?confId=14269`

2017: Chair: 5th Rome Joint Workshop *"Hot QCD Matters"*
`https://agenda.infn.it/conferenceDisplay.py?confId=13016`

2016: Chair: 4th Rome Joint Workshop *"Selected puzzles in Particle Physics"*
`https://agenda.infn.it/conferenceDisplay.py?confId=12099`

2016: Director: *XVIII Frascati Spring School "Bruno Touscheck"* & *5th Young Researcher Workshop* `http://www.lnf.infn.it/conference/lnfss/16/index.php`

2015: Chair: 3rd Rome Joint Workshop *"Challenges in the Dark Sector: Alternatives to the WIMP paradigm"* `https://agenda.infn.it/conferenceDisplay.py?confId=10217`

2015: Chair: 2nd Rome Joint Workshop *"Top mass: challenges in definition and determination"* `https://agenda.infn.it/conferenceDisplay.py?confId=9202`

2014: Chair: 1st Rome Joint Workshop *"Rethinking Naturalness"* , `https://agenda.infn.it/conferenceDisplay.py?confId=8527`

2014: Director: *XVII Frascati Spring School "Bruno Touscheck" & 4th Young Researcher Workshop,* `http://www.lnf.infn.it/conference/lnfss/14/index.php`

2012: Director: *XVI Frascati Spring School "Bruno Touscheck" & 3rd Young Researcher Workshop,* `http://www.lnf.infn.it/conference/lnfss/12/index.php`

2010: Director: *XV Frascati Spring School "Bruno Touscheck" & 2nd Young Researcher Workshop,* `http://www.lnf.infn.it/conference/lnfss/10/index.php`

2010: Organizer: Course on *Space-time metrics, Cosmology, Inflation and Dark Matter*, LNF

2009: Co-chair of the Local Organization Committee:
CERN School: 5th Latin American School of High-Energy Physics, Antioquia (CO)
`http://physicschool.web.cern.ch/PhysicSchool/LatAmSchool/2009/`

2009: Director: *XIV Frascati Spring School "Bruno Touscheck" & 1st Young Researcher Workshop,* `http://www.lnf.infn.it/conference/lnfss/09/index.php`

2007: Co-Chair: *International Meeting on Lepton Properties and the Cosmological Origin of Matter*, Antioquia, (CO) `http://csi.uan.edu.co/imlpcom07/index.htm`

2003: Chair of the session: *Neutrino Physics, Astrophysics and Cosmology*, 10th Marcel Grossmann Meeting on General Relativity, Rio de Janeiro (BR)

2000: Chair: *III Latin American Symposium on High Energy Physics*, (SILAFAE-III), Cartagena de Indias, (CO)

1997: Director: *XII Colombian School in Theoretical Physics*, San Andres Islas, (CO)

Member of Organizing & Scientific Committees of Workshops, Conferences and Schools

2018: Member of the Organizing Committee: *XIX Frascati Spring School "Bruno Touscheck" & 6th Young Researcher Workshop*

2002-08: Member of the Organizing Committee:
LNF Spring School in Nuclear, Subnuclear and Astroparticle Physics "Bruno Touscheck", INFN - Laboratori Nazionali di Frascati. (Years 2002/03/04/05/06/07/08).

2006-09: Member of the Organizing Committee: *LNF Spring Institute* (Years 2006/07/08/09).

2002 - : Member of the Scientific Committee: *Latin American Symposium on High Energy Physics*, (SILAFAE) (2002 - present).

1994: Member of the Organizing Committee: *International Workshop on Supersymmetry and Unification of Fundamental Interactions SUSY-94*, U. of Michigan, Ann Arbor, (USA)

Scientific Reviewer:

Projects and proposals reviewer: FONDECYT (Chile); National Science Centre (Poland); Comité para el Desarrollo de la Investigación (Antioquia U., Colombia); Erwin Schrödinger International Institute for Mathematics and Physics (U. of Vienna, Austria)

Referee of Scientific Journals:

- Physical Review Letters
- Physical Review D
- Nuclear Physics B
- Physics Letters B
- JHEP (Journal of High Energy Physics)
- JCAP (Journal of Cosmology and Astroparticle Physics)
- Journal of Physics G
- New Journal of Physics
- Europhysics Letters
- European Physical Journal C

Thesis Supervision and Teaching

Career supervision (abridged)

- 5 Ph. D. students (*all presently holding academic positions*)
- 4 M. Sc. students, 2 B. Sc., 4 Ph. D. thesis opponent
- 8 Postdoctoral fellows at LNF

Ph. D., M. Sc. & B. Sc. thesis (detailed):

- **Ph. D.**: Dafne Guetta, (**presently:** Researcher, Osservatorio Astr. Roma), Topic: *B Physics in SUSY without R-parity.* Bologna U., (February 1999).
- **Ph. D.**: Jesus M. Mira (**presently:** Associate Professor, Antioquia U., CO), Topic: *B Physics in SUSY without R-parity.* Antioquia U. (December 2000).
- **M. Sc.**: Jorge I. Zuluaga (**presently:** Associate Professor, Antioquia U., CO), Topic: *Pulsar Kicks.* Antioquia U. (February 2001).
- **M. Sc.**: Diego Aristizabal (**presently:** Associate Professor, U. Técnica Federico Santa María, Valparaíso, CL), Topic: *Flavor Symmetries.* (January 2004).
- **Ph.D.**: Jorge I. Zuluaga (**presently:** Associate Professor, Antioquia U., CO), Topic: *Supernova neutrino signals.* Antioquia U. (January 2005).
- **B. Sc.**: Jorge Noreña (**presently:** Associate Professor, Pontificia U. Católica de Valparaíso, CL), Topic: *Leptogenesis.* Antioquia U. (June 2006).
- **M. Sc.**: Luis F. Duque (**presently:** Professor, ITM - Medellín), Topic: *Flavor Symmetries in GUT Models.* Antioquia U. (February 2007).
- **B. Sc.**: Carolina Arbelaez (**presently:** Postdoc, U. Técnica Federico Santa María, Valparaíso, CL), Topic: *Flavor Symmetries for ν masses.* (December 2010).
- **Ph. D.**: Luis A. Muñoz, (**presently:** Professor, ITM - Medellín), Topic: *Selected Issues in Leptogenesis.* Antioquia U. (April 2010).
- **M. Sc.** - César Arias, (**presently:** Assistant Professor, ITM - Medellín) Topic: *Flavour in Leptogenesis.* Antioquia U. (June 2011).

– **Ph. D.**: Cristian D. Ruiz Carvajal, (**presently:** Contract Professor, UdeA, Medellín), Topic: *Phenomenology and models of axion dark matter.* Antioquia U.

Didactics and teaching (abridged)

- 12 postgraduate and 3 graduate courses: physics beyond the standard model, QFT, SUSY, astroparticle physics, physics of the early universe, subatomic physics, electromagnetism: U. Antioquia (CO), U. Autonoma Madrid (ES)
- 4 invited short courses in Univerisities and Schools on physics of the early universe: U. of Southern Denmark (DK), U. Barcelona (ES), U. San Carlos (GT), Astro-scuola 2001, Otranto (I) .

Teaching: courses in Undergraduate, M. Sc., Ph. D. programs and Physics Schools (detailed)

– *Three lectures on the physics of the Early Universe*
9th Odense Winter School on Theoretical Physics - CP3-Origins University of Southern Denmark - Odense (DK) - February 6-10, 2017.
– *Standard Model II.* (M. Sc.). 2° semesters 2010 and 2011, Physics Department, Madrid Autonoma University Madrid, (Spain).
– *Four lectures on the Early Universe: 1. Boltzmann Equations, 2. Recombination, 3. Nucleosynthesis, 4. Freeze-out of WIMP Dark Matter.* (M. Sc. & Ph. D.)
Barcelona University - June 14-18, 2010.
– *Introduction to Quantum Field Theory.* (M. Sc.)
University San Carlos de Guatemala - February 5-9, 2007.
– *Neutrinos in Physics and Astrophysics* . (Graduate Level).
1 semester, Ph. D. program, U. Antioquia (Medellín - CO)
– *Introduction to the Standard Model.* (Undergraduate Level).
2 semesters, U. Antioquia (Medellín - CO)
– *Advanced topics in the Standard Model.* (Graduate Level).
1 semester, Ph. D. program, U. Antioquia (Medellín - CO)
– *Supersymmetry.* (Graduate Level).
3 semesters, Ph. D. program, U. Antioquia (Medellín - CO)
– *Introduction to Subatomic Physics.* (Undergraduate Level).
2 semesters, U. Antioquia (Medellín - Colombia)
– *Selected topics in Physics of the Early Universe.* (Graduate & Undergraduate Level).
1 semester, U. Antioquia (Medellín - Colombia)
– *Electromagnetism I.* (Undergraduate level).
3 semesters, U. Antioquia (Medellín - CO)
– *Introduction to Quantum Field Theory* (Graduate Level).
3 semesters, Ph. D. program, U. Antioquia (Medellín - CO)
– *Neutrinos and Supernovae.* Lectures at "AstroScuola 2001 - Prima Scuola Nazionale in Fisica delle Astroparticelle" Conca Specchiulla (Otranto, Lecce) 11 - 16 June 2001.
– *From Quarks to Cosmos.* Lectures at *Incontri di Fisica dell' INFN* Frascati (Roma) 5 -7 Settembre 2001.

Outreach ("Terza Missione"):

2017 Collaboration to "LNF Highlights 2016" publication with the divulgative article "Where should we search to find the Axion?"
http://library.lnf.infn.it/wp-content/uploads/2017/09/Highlights2016.pdf

2016 Outreach Conference, ITM, Medellín, Colombia,
"Las constantes fundamentales de la naturaleza y la física moderna".

2016 Two talks at the 12th IPPOG International Masterclass 2016 at LNF
"Le costanti fondamentali della natura e la fisica moderna",
"Introduzione al Modello Standard".

2015 Talk at the 11th IPPOG International Masterclass 2015 at LNF
"Le costanti fondamentali della natura e la fisica moderna".

2013 Outreach Conference, Parque Explora, Medellín, Colombia,
"Las constantes fundamentales de la naturaleza y la física moderna".

2012 Conference for Scientific High Schools, Liceo Scientifico G. Marinelli, Udine
"Le costanti fondamentali della natura e la fisica moderna".

2007 Outreach conference, *Instituto Italiano de Cultura*, Ambasciata d' Italia,
Ciudad de Guatemala: "De los quarks al Cosmo".

2006– Scientific Collaborator for the INFN outreach project "ScienzaPerTutti".

2002 Outreach conference, Instituto di Fisica, Univ. de Antioquia, Medellín, Colombia,
"From quarks to Cosmos". July 29th, 2002.

2001 Outreach conference: *Corso di fisica per insegnanti di scuola media superiore,*
Laboratori Nazionali di Frascati, "Dai quarks al Cosmo".

Resumed List of Research Topics

- LEP Physics. Radiative Corrections in $SU(2) \times U(1)$. Top-quark mass loop effects.
- Global fits to high precision measurements and limits on new physics parameters
- GUT models. Non-conventional E_6 models.
- B-physics. Study of rare decays. New physics effects in B-decays. Excess of b-quarks production at LEP: analysis and models.
- SUSY without R-parity. Neutrino masses from broken R-parity. Models for R-parity as an accidental symmetry.
- Flavor Symmetries: models for charged and neutral fermion masses.
- Neutrino physics: electromagnetic form factors. Neutrino propagation in matter.
- Physics of Supernovæ and Pulsars. Models to explain *Pulsar Kicks*. Limits on neutrino masses from precise measurements of a Galactic supernova neutrino signal.
- Leptogenesis: Spectator processes; Flavor effects; CP asymmetries in scatterings. Low scale leptogenesis.
- Non-Abelian and Abelian flavor symmetries for neutrino masses. Related effects in leptogenesis.

- Dark Matter. Non-conventional candidates. Asymmetric Dark Matter. Dark Matter decays and related signals (anomalies) in cosmic rays fluxes. Dark Matter from GUTs.
- Spontaneous breaking of the $SU(3)^5$ flavour symmetry. Effective potential and phenomenological models.
- Axion physics.
- Dark photons and dark sectors.

Specific skills in leadership

- Experience in starting/developing research groups.
- Experience in leading research projects.
- Experience in preparing/submitting research proposals.
- Experience in the organization of scientific events.

Publications

Search filter (for the INSPIRE database):

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Journal Publications

1. **"$U(1)$ flavour symmetries as Peccei-Quinn symmetries"**
   F. Björkeroth, L. Di Luzio, F. Mescia and E. Nardi,
   JHEP **1902** 133 (2019) [arXiv:1811.09637 [hep-ph]].
2. **"Astrophobic Axions"**
   L. Di Luzio, F. Mescia, E. Nardi, P. Panci and R. Ziegler,
   Phys. Rev. Lett. **120**, 261803 (2018) [arXiv:1712.04940 [hep-ph]].
3. **"A cosmological pathway to testable leptogenesis"**
   B. Dutta, C. S. Fong, E. Jimenez and E. Nardi,
   JCAP **1810**, no.10, 025, (2018) [arXiv:1804.07676 [hep-ph]].
4. **"Novel way to search for Dark Photon in beam-dump experiments"**
   L. Marsicano, M. Battaglieri, M. Bondí, C.D. R. Carvajal, A. Celentano, M. De Napoli, R. De Vita, E. Nardi, M. Raggi, P. Valente
   Phys. Rev. Lett. **120**, no. 4 041802 (2018) [arXiv:1802.03794 [hep-ex]].
5. **"Dark photon production through positron annihilation in beam-dump experiments"**
   L. Marsicano, M. Battaglieri, M. Bondí, C.D. R. Carvajal, A. Celentano, M. De Napoli, R. De Vita, E. Nardi, M. Raggi, P. Valente
   Phys. Rev. **D98** (2018) no.1, 015031 [arXiv:1802.03794 [hep-ex]].
6. **"Resonant production of dark photons in positron beam dump experiments"**
   E. Nardi, C. D. R. Carvajal, A. Ghoshal, D. Meloni and M. Raggi,
   Phys. Rev. D **97**, no. 9, 095004 (2018) [arXiv:1802.04756 [hep-ph]].
7. **"Probing Leptogenesis"**
   E. J. Chun *et al.*,
   Int. J. Mod. Phys. **A33** (2018) no.05n06, 1842005 [arXiv:1711.02865 [hep-ph]].
8. **"Window for preferred axion models"**
   L. Di Luzio, F. Mescia and E. Nardi,
   Phys. Rev. **D96** (2017) no.7, 075003 [arXiv:1705.05370 [hep-ph]].
9. **"Accidental Peccei-Quinn symmetry protected to arbitrary order"**
   L. Di Luzio, E. Nardi and L. Ubaldi,
   Phys. Rev. Lett. **119**, no. 1, 011801 (2017) [arXiv:1704.01122 [hep-ph]].
10. **"Redefining the Axion Window"**
    L. Di Luzio, F. Mescia and E. Nardi,
    Phys. Rev. Lett. **118**, no.3, 031801 (2017) [arXiv:1610.07593 [hep-ph]].

11. **"Quasi-Dirac neutrinos at the LHC"**
G. Anamiati, M. Hirsch and E. Nardi,
JHEP **1610**, 010 (2016) [arXiv:1607.05641 [hep-ph]].

12. **"Dark Matter from the vector of SO(10)"**
S. M. Boucenna, M. B. Krauss and E. Nardi,
Phys. Lett. B **755**, 168 (2016) [arXiv:1511.02524 [hep-ph]].

13. **"Minimal Asymmetric Dark Matter"**
S. M. Boucenna, M. B. Krauss and E. Nardi,
Phys. Lett. B **748**, 191 (2015) [arXiv:1503.01119 [hep-ph]].

14. **"Leptogenesis in SO(10)"**
C. S. Fong, D. Meloni, A. Meroni and E. Nardi,
JHEP **1501**, 111 (2015) [arXiv:1412.4776 [hep-ph]].

15. **"Cloistered Baryogenesis"**
D. Aristizabal Sierra, C. S. Fong, E. Nardi and E. Peinado,
JCAP **1402**, 013 (2014) [arXiv:1309.4770 [hep-ph]].

16. **"Quark masses, mixings, and CP violation from spontaneous breaking of flavor $SU(3)^3$"**
C. S. Fong and E. Nardi,
Phys. Rev. D **89**, 036008 (2014) [arXiv:1307.4412 [hep-ph]].

17. **"New ways to TeV scale leptogenesis"**
C. S. Fong, M. C. Gonzalez-Garcia, E. Nardi and E. Peinado,
JHEP **1308**, 104 (2013) [arXiv:1305.6312 [hep-ph]].

18. **"Spontaneous Breaking of Flavor Symmetry Avoids the Strong CP Problem"**
C. S. Fong and E. Nardi,
Phys. Rev. Lett. **111**, no. 6, 061601 (2013) [arXiv:1305.1627 [hep-ph]].

19. **"Yukawa hierarchies from spontaneous breaking of the $SU(3)_L \times SU(3)_R$ flavour symmetry?"**
J. R. Espinosa, C. S. Fong and E. Nardi,
JHEP **1302**, 137 (2013) [arXiv:1211.6428 [hep-ph]].

20. **"Squeezing out predictions with leptogenesis from SO(10)"**
F. Buccella, D. Falcone, C. S. Fong, E. Nardi and G. Ricciardi,
Phys. Rev. D **86**, 035012 (2012) [arXiv:1203.0829 [hep-ph]].

21. **"Leptogenesis in the Universe"**
C. S. Fong, E. Nardi and A. Riotto,
Adv. High Energy Phys. **2012**, 158303 (2012) [arXiv:1301.3062 [hep-ph]].

22. **"Neutrino Masses in $SU(5) \times U(1)_F$ with Adjoint Flavons"**
E. Nardi, D. Restrepo and M. Velasquez,
Eur. Phys. J. C **72**, 1941 (2012) [arXiv:1108.0722 [hep-ph]].

23. **"Leptogenesis from Soft Supersymmetry Breaking (Soft Leptogenesis)"**
C. S. Fong, M. C. Gonzalez-Garcia and E. Nardi,
Int. J. Mod. Phys. A **26**, 3491 (2011) [arXiv:1107.5312 [hep-ph]].

24. **"Naturally large Yukawa hierarchies"**
E. Nardi,
Phys. Rev. D **84**, 036008 (2011) [arXiv:1105.1770 [hep-ph]].

25. **"Minimal flavour violation extensions of the seesaw"**
R. Alonso, G. Isidori, L. Merlo, L. A. Munoz and E. Nardi,
JHEP **1106**, 037 (2011) [arXiv:1103.5461 [hep-ph]].

26. **"Early Universe effective theories: The Soft Leptogenesis and R-Genesis Cases"**
C. S. Fong, M. C. Gonzalez-Garcia and E. Nardi
JCAP **1102**, 032 (2011) [arXiv:1012.1597 [hep-ph]].

27. **"Supersymmetric Leptogenesis"**
C. S. Fong, M. C. Gonzalez-Garcia, E. Nardi and J. Racker
JCAP **1012**, 013 (2010) [arXiv:1009.0003 [hep-ph]].

28. **"Flavoured soft leptogenesis and natural values of the B term"**
C. S. Fong, M. C. Gonzalez-Garcia, E. Nardi and J. Racker
JHEP **1007**, 001 (2010) [arXiv:1004.5125 [hep-ph]].

29. **"Flavor symmetries, leptogenesis and the absolute neutrino mass scale"**
E. Bertuzzo, P. Di Bari, F. Feruglio and E. Nardi
JHEP **0911** 036 (2009) [arXiv:0908.0161 [hep-ph]]

30. **"Lepton Flavor Equilibration and Leptogenesis"**
D. Aristizabal Sierra, M. Losada and E. Nardi,
JCAP **0912** 015 (2009) [arXiv:0905.0662 [hep-ph]]

31. **"Purely Flavored Leptogenesis"**
D. Aristizabal Sierra, L. A. Munoz and E. Nardi
Phys. Rev. D **80**, 016007 (2009) [arXiv:0904.3043 [hep-ph]].

32. **"Decaying Dark Matter can explain the electron/positron excesses"**
E. Nardi, F. Sannino and A. Strumia,
JCAP **0901**, 043 (2009). [arXiv:0811.4153 [hep-ph]].

33. **"Fermion mass hierarchy and non-hierarchical mass ratios in SU(5) x U(1)$_F$"**
L. F. Duque, D. A. Gutierrez, E. Nardi and J. Norena
Phys. Rev. D**78**:035003,2008. [arXiv:0804.2865 [hep-ph]].

34. **"Leptogenesis"**
S. Davidson, E. Nardi and Y. Nir,
Phys. Rept. **466**:105-177,2008. [arXiv:0802.2962 [hep-ph]].

35. **"CP violation in scatterings, three body processes and the Boltzmann equations for leptogenesis"**
E. Nardi, J. Racker and E. Roulet
JHEP **0709**, 090 (2007) [arXiv:0707.0378 [hep-ph]]

36. **"Variations on leptogenesis"**
D. Aristizabal Sierra, M. Losada and E. Nardi
Phys. Lett. B 659, 328 (2008) [arXiv:0705.1489 [hep-ph]]

37. **"The importance of N_2 leptogenesis"**
G. Engelhard, Y. Grossman, E. Nardi and Y. Nir
Phys. Rev. Lett. **99**, 081802 (2007) [arXiv:hep-ph/0612187]

38. **"The importance of flavor in leptogenesis"**
E. Nardi, Y. Nir, E. Roulet and J. Racker
JHEP **0601**, 164 (2006) [arXiv:hep-ph/0601084]

39. **"On Higgs and sphaleron effects during the leptogenesis era"**
E. Nardi, Y. Nir, J. Racker and E. Roulet
JHEP **0601**, 068 (2006) [arXiv:hep-ph/0512052]

40. **"Constraints on neutrino masses from a galactic supernova neutrino signal at present and future detectors"**
E. Nardi and J. I. Zuluaga
Nucl. Phys. B **731**, 140 (2005) [arXiv:hep-ph/0412104]

41. **"b-tau Yukawa non-unification in supersymmetric SU(5) with an Abelian flavor symmetry"**
D. Aristizabal and E. Nardi
Phys. Lett. B **578**, 176 (2004) [arXiv:hep-ph/0306206]

42. **"Exploring the sub-eV neutrino mass range with supernova neutrinos"**
E. Nardi and J. I. Zuluaga
Phys. Rev. D **69**, 103002 (2004) [arXiv:astro-ph/0306384]

43. **"Bounds on the tau and muon neutrino vector and axial vector charge radius"**
M. Hirsch, E. Nardi and D. Restrepo
Phys. Rev. D **67**, 033005 (2003) [arXiv:hep-ph/0210137]

44. **"Bilinear R-parity violation and small neutrino masses: A self-consistent framework"**
J. M. Mira, E. Nardi, D. A. Restrepo and J. W. F. Valle
Phys. Lett. B **492**, 81 (2000) [arXiv:hep-ph/0007266]

45. **"Pulsar acceleration by asymmetric emission of sterile neutrinos"**
E. Nardi and J. I. Zuluaga
Astrophys. J. **549**, 1076 (2001) [arXiv:astro-ph/0006285]

46. **" Nonanomalous horizontal $U(1)_H$ gauge model of flavor"**
J. M. Mira, E. Nardi and D. A. Restrepo
Phys. Rev. D **62**, 016002 (2000) [arXiv:hep-ph/9911212]

47. **"Neutrino propagation in matter with general interactions"**
S. Bergmann, Y. Grossman and E. Nardi
Phys. Rev. D **60**, 093008 (1999) [arXiv:hep-ph/9903517]

48. **"B $\to$ tau mu (X) decays in SUSY models without R-parity"**
D. Guetta, J. M. Mira and E. Nardi
Phys. Rev. D **59**, 034019 (1999) [arXiv:hep-ph/9806359]

49. **"Searching for new physics in rare B $\to \tau$ decays"**
D. Guetta and E. Nardi
Phys. Rev. D **58**, 012001 (1998) [arXiv:hep-ph/9707371]

50. **"Renormalization group induced neutrino masses in supersymmetry without R-parity"**
E. Nardi
Phys. Rev. D **55**, 5772 (1997) [arXiv:hep-ph/9610540]

51. **"$\mathbf{B \to \tau^+\tau^-(X)}$ decays: First constraints and phenomenological implications"**
Y. Grossman, Z. Ligeti and E. Nardi
Phys. Rev. D **55**, 2768 (1997) [arXiv:hep-ph/9607473]

52. **"Neutrino masses and mixing in supersymmetric models without R parity"**
F. Borzumati, Y. Grossman, E. Nardi and Y. Nir
Phys. Lett. B **384**, 123 (1996) [arXiv:hep-ph/9606251]

53. **"$\mathbf{R_b}$ and New Physics: A Comprehensive Analysis"**
P. Bamert, C. P. Burgess, J. M. Cline, D. London and E. Nardi
Phys. Rev. D **54**, 4275 (1996) [arXiv:hep-ph/9602438]

54. **"First limit on inclusive $\mathbf{B \to X(s)}$ neutrino antineutrino decay and constraints on new physics"**
Y. Grossman, Z. Ligeti and E. Nardi
Nucl. Phys. B **465**, 369 (1996) [Erratum-ibid. B **480**, 753 (1996)] [arXiv:hep-ph/9510378]

55. **"Top-Charm flavor changing contributions to the effective bsZ vertex"**
E. Nardi
Phys. Lett. B **365**, 327 (1996) [arXiv:hep-ph/9509233]

56. **"Supersymmetry without R-parity and without lepton number"**
T. Banks, Y. Grossman, E. Nardi and Y. Nir
Phys. Rev. D **52**, 5319 (1995) [arXiv:hep-ph/9505248]

57. **"Realistic Susy Model With Four Fermion Families, Natural R Parity And Tau-Neutrino In The Ev Range"**
Z. Berezhiani and E. Nardi
Phys. Lett. B **355**, 199 (1995) [arXiv:hep-ph/9503367]

58. **"Natural R-parity conservation with horizontal symmetries: A Four generation model"**
Z. Berezhiani and E. Nardi
Phys. Rev. D **52**, 3087 (1995) [arXiv:hep-ph/9411249]

59. **"New neutral gauge bosons and new heavy fermions in the light of the new LEP data"**
E. Nardi, E. Roulet and D. Tommasini
Phys. Lett. B **344**, 225 (1995) [arXiv:hep-ph/9409310]

60. **"Limits on neutrino mixing with new heavy particles"**
E. Nardi, E. Roulet and D. Tommasini
Phys. Lett. B **327**, 319 (1994) [arXiv:hep-ph/9402224]

61. **"Identifying unconventional E(6) models at $\mathbf{e^+ e^-}$ colliders"**
E. Nardi and T. G. Rizzo
Phys. Rev. D **50**, 203 (1994) [arXiv:hep-ph/9401260]

62. **"Signals of unconventional E(6) models at e^+ e^- colliders"**
E. Nardi
Phys. Rev. D **49**, 4394 (1994) [arXiv:hep-ph/9309239]

63. **"*mu*-e conversion in nuclei and Z-prime physics"**
J. Bernabeu, E. Nardi and D. Tommasini
Nucl. Phys. B **409**, 69 (1993) [arXiv:hep-ph/9306251]

64. **"Unconventional Superstring Derived E(6) Models And Neutrino Phenomenology"**
E. Nardi
Phys. Rev. D **48**, 3277 (1993) [arXiv:hep-ph/9304266]

65. **"Z-prime, new fermions and flavor changing processes. Constraints on E(6) models from mu $\to$ e e e"**
E. Nardi
Phys. Rev. D **48**, 1240 (1993) [arXiv:hep-ph/9209223]

66. **"A Simultaneous analysis of Z-prime and new fermions effects. Global constraints in E(6) and SO(10) models"**
E. Nardi, E. Roulet and D. Tommasini
Phys. Rev. D **46**, 3040 (1992)

67. **"Global Analysis Of Fermion Mixing With Exotics"**
E. Nardi, E. Roulet and D. Tommasini
Nucl. Phys. B **386**, 239 (1992)

68. **"Radiative corrections in unconstrained SU(2) x U(1) and the top mass problem"**
B. W. Lynn and E. Nardi
Nucl. Phys. B **381**, 467 (1992)

69. **"Are exotic stable quarks cosmologically allowed?"**
E. Nardi and E. Roulet
Phys. Lett. B **245**, 105 (1990)

70. **"Bounds on ordinary exotic fermion mixing from LEP-1"**
E. Nardi and E. Roulet
Phys. Lett. B **248**, 139 (1990)

71. **"Tests Of Extended Gauge Structures With High Statistics At The Z Peak"**
E. Nardi
Phys. Lett. B **233**, 499 (1989)

72. **"Removing the top mass dependence from physical observables"**
E. Nardi
Int. J. Mod. Phys. A **6**, 1447 (1991)

Proceedings and Reports

1. **"The quark flavor problem and spontaneous breaking of flavour $SU(3)^3$"**
   E. Nardi,
   PoS PLANCK **2015**, 090 (2015).
2. **"Quark Yukawa pattern from spontaneous breaking of flavour $SU(3)^3$"**
   E. Nardi,
   Nucl. Part. Phys. Proc. **267-269**, 69 (2015).
3. **"Minimal flavour violating extensions of the seesaw"**
   E. Nardi,
   Nucl. Phys. Proc. Suppl. **237-238**, 332 (2013).
4. **"Selected Issues in Leptogenesis"**
   E. Nardi,
   Proceedings of the 15th Lomonosov conference. 18-24 Aug 2011 Moscow, Russia.
   DOI: 10.1142/9789814436830_0052, **pp. 238-243.**
5. **"Lepton flavor violation in minimal flavor violation extensions of the seesaw"**
   E. Nardi,
   Nucl. Phys. Proc. Suppl. **225-227**, 236 (2012) [arXiv:1112.4418 [hep-ph]].
6. **"Leptogenesis and neutrino masses"**
   E. Nardi,
   Nucl. Phys. Proc. Suppl. **217**, 27 (2011).
7. **"Implications of an additional scale on leptogenesis"**
   D. Aristizabal Sierra, L. A. Muñoz and E. Nardi,
   J. Phys. Conf. Ser. **171**, 012078 (2009) [arXiv:0904.3052 [hep-ph]]
   Proceedings of DISCRETE'08: Symposium on Prospects in the Physics of Discrete Symmetries, Valencia, Spain, 11-16 Dec 2008
8. **"Recent Issues in Leptogenesis"**
   E. Nardi,
   Proceedings of the 42nd Rencontres de Moriond on Electroweak interactions and Unified theories, La Thuile, Italy, 10-17 Mar 2007
   [arXiv:0706.0487 [hep-ph]]
   [`http://events.lal.in2p3.fr/Moriond/Images/EW2007-Book.pdf`]
9. **"Topics in leptogenesis"**
   E. Nardi,
   AIP Conf. Proc. **917**, 82 (2007) [arXiv:hep-ph/0702033]
   Also in *Puerto Vallarta, Particles and fields* 82-89. *Proceedings of 12th Mexican School on Particles and Fields and 6th Latin American Symposium on High Energy Physics (VI- Silafae/XII-MSPF), Puerto Vallarta, Mexico, 1-8 Nov 2006*
10. **"Supernova neutrinos and the absolute scale of neutrino masses: A Bayesian approach"**
    E. Nardi,
    Proceedings of 5th Latin American Symposium on High Energy Physics (V-SILAFAE), Lima, Peru, 12-17 Jul 2004.
    Published in *Lima 2004, High energy physics* 222-226 [arXiv:hep-ph/0412024]

11. **"Measuring neutrino masses with supernova neutrinos"**
E. Nardi,
Proceedings of the 10th Marcel Grossmann Meeting on Recent Developments in Theoretical and Experimental General Relativity, Gravitation and Relativistic Field Theories (MG X MMIII), Rio de Janeiro, Brazil, 20-26 Jul 2003. [arXiv:astro-ph/0401624]
Published in *Rio de Janeiro 2003, Recent developments in theoretical and experimental general relativity, gravitation, and relativistic field theories , pt. B* 1240-1242

12. **"On the neutrino vector and axial vector charge radius"**
E. Nardi,
AIP Conf. Proc. **670**, 118 (2003) [arXiv:hep-ph/0212266]
Proceedings of the 10th Mexican School of Particles and Fields (X-MSPF), Playa del Carmen, Mexico, 30 Oct - 6 Nov 2002

13. **"Horizontal U(1)H symmetry: A non-anomalous model"**
E. Nardi,
Talk given at 3rd Latin American Symposium on High Energy Physics (SILAFAE III),
Cartagena de Indias, Colombia, 2-8 Apr 2000 [arXiv:he p-ph/0009329]
Published in Bristol, UK: IOP (2000) nonconsec. pag
`http://jhep.sissa.it/cgi-bin/PrHEP/cgi/reader/list.cgi?confid=5`

14. **"Effects of a general set of interactions on neutrino propagation in matter"**
E. Nardi,
In "Cosmo-99 – Proceedings of the International Workshop on Particle Physics and the Early Universe, Abdus Salam ICTP, Trieste, Italy – 27 September - 2 October, 1999". [arXiv:hep-ph/0002026]
G. Senianovič and A.Y. Smirnov eds. World Scientific Pub. Co., Singapore.

15. **The BaBar Physics Book**. P.F. Harrison and H.R. Queen Editors.
`http://www.slac.stanford.edu/pubs/slacreports/slac-r-504.html`
Contribution to "**Chapter 9**: Rare B decays within the Standard Model". Sects.: 9.1.1-2; 9.2.4 Autori: Y. Grossman, D. Guetta, Z. Ligeti and E. Nardi. SLAC Report 504 – Stanford, (October 1998).

16. **The BaBar Physics Book**. P.F. Harrison and H.R. Queen Editors.
`http://www.slac.stanford.edu/pubs/slacreports/slac-r-504.html`
Contribution to "**Chapter 13**: Physics Beyond the Standard Model". Sects.: 13.4.3; 13.4.4; 13.4.5; 13.4.6; 13.5.7
Autori: D. Guetta and E. Nardi. SLAC Report 504 – Stanford, (October 1998).

17. **"Neutrino phenomenology from unconventional E(6) models"**
E. Nardi,
Published in Cosmol.Dark Matter 1993:0301-308 (QB981:I52:1993)
[arXiv:hep-ph/9401275] UM-TH-94-01(1994)
Talk given at Int. School on Cosmological Dark Matter, Valencia, Spain, 4-8 Oct 1993

18. **"Review Of Constraints On Fermion Mixing"**

E. Nardi,
Published in Waikoloa Linear Collid.1993:0496-504 (QCD183:I795:1993)
[arXiv:hep-ph/9307267] UM-TH-93-14(1993)
Invited talk at 2nd International Workshop on Physics and Experiments with Linear e+ e- Colliders, Waikoloa, HI, 26-30 Apr 1993

19. **"New Flavor Changing Interactions In Extended Gauge Models"**
E. Nardi,
Published in DPF Conf.1992:1240-1243 (QCD161:A6:1992)
[arXiv:hep-ph/9211246] UM-TH-92-30(1992)
Presented at Particles & Fields 92: 7th Meeting of the Division of Particles Fields of the APS (DPF 92), Batavia, IL, 10-14 Nov 1992

20. **"Constraints on fermion mixing with exotics"**
E. Nardi, E. Roulet and D. Tommasini,
Published in Valencia Workshop 1991:124-130 (QCD161:I546:1991)
Int. Workshop on Electroweak Physics Beyond the Standard model, Valencia, Spain, Oct 2-5, 1991

Editorial work

1. **"Physics Challenges in the LHC Era."** Proceedings, 5th Young Researchers Workshop, 17th Frascati Spring School 'Bruno Touschek'; Frascati, Italy, May 9-13, 2016,"
Editore: E. Nardi (Frascati),
Frascati Physics Series, Vol. LXIII. *ISBN 978-88-86409-82-7; Frascati, Italy: INFN (2016) 60 pp.*
`http://www.lnf.infn.it/sis/frascatiseries/Volume63/Volume63.pdf`

2. **"Physics Challenges in the LHC Era."** Proceedings, 4th Young Researchers Workshop, 16th Frascati Spring School 'Bruno Touschek'; Frascati, Italy, May 12-15, 2014,
Editore: E. Nardi (Frascati),
Frascati Physics Series, Vol. LIX. *ISBN 978-88-8640963-6; Frascati, Italy: INFN (2014) 66 pp.*
`http://www.lnf.infn.it/sis/frascatiseries/Volume59/Volume59.pdf`

3. **"Physics Challenges in the LHC Era."** Proceedings, 3rd Young Researchers Workshop, 16th Frascati Spring School 'Bruno Touschek'; Frascati, Italy, May 7-10, 2012,
Editore: E. Nardi (Frascati),
Frascati Physics Series, Vol. LV *ISBN 978-88-86409-59-9; Frascati, Italy: INFN (2012) 96 pp.*
`http://www.lnf.infn.it/sis/frascatiseries/Volume55/volume55.pdf`

4. **"Physics Challenges in the LHC Era."** Proceedings, 2nd Young Researchers Workshop, 15th Frascati Spring School 'Bruno Touschek'; Frascati, Italy, May 10-13, 2010,
Editore: E. Nardi (Frascati),
Frascati Physics Series, Vol. LI *ISBN ISBN 978-88-86409-60-5; Frascati, Italy: INFN (2010) 107 pp.*
`http://www.lnf.infn.it/sis/frascatiseries/Volume51/volume51.pdf`

5. **"Physics Challenges in the LHC Era."** Proceedings, 1st Young Researchers Workshop, 14th Frascati Spring School 'Bruno Touschek'; Frascati, Italy, May 11-14, 2009, Editore: E. Nardi (Frascati),
   Frascati Physics Series, Vol. XLVIII *ISBN 978-88-86409-57-5; Frascati, Italy: INFN (2009) 100 pp.*
   `http://www.lnf.infn.it/sis/frascatiseries/Volume48/volume48.pdf`

6. **Frascati National Laboratory, INFN-LNF. 2005 Annual Report.**
   Editore: E. Nardi, (Frascati). LNF-06-10-IR, Mar 2006. 273pp.
   `http://www.lnf.infn.it/rapatt/2005/LNF_RAPATT_05.pdf`

7. **Frascati National Laboratory, INFN-LNF. 2004 Annual Report.**
   Editore: E. Nardi, (Frascati). LNF-05-05-IR, Apr 2005. 253 pp.
   `http://www.lnf.infn.it/rapatt/2005/LNF_RAPATT_04.pdf`

8. **"High Energy Physics: 3rd Latin American Symposium."**
   Proceedings SILAFAE-III, Cartagena de Indias, Colombia, April 2-8, 2000.
   Editore: Enrico Nardi, (Antioquia U.).
   Published in Bristol, UK: IOP (2000) nonconsec. pag
   `http://jhep.sissa.it/cgi-bin/PrHEP/cgi/reader/list.cgi?confid=5`

Elenco delle pubblicazioni presentate

1. **"Minimal Asymmetric Dark Matter."**
   Autori: S. M. Boucenna, M. B. Krauss and E. Nardi,
   Phys. Lett. **B 748**, 191 (2015) [arXiv:1503.01119 [hep-ph]]. (8 pp.)
2. **"Yukawa hierarchies from spontaneous breaking of the $SU(3)_L \times SU(3)_R$ flavour symmetry?"**
   Autori: J. R. Espinosa, C. S. Fong and E. Nardi,
   JHEP **1302**, 137 (2013) [arXiv:1211.6428 [hep-ph]]. (25 pp.)
3. **"Naturally large Yukawa hierarchies."**
   Autore: E. Nardi,
   Phys. Rev. D **84**, 036008 (2011) [arXiv:1105.1770 [hep-ph]]. (8 pp.)
4. **"Decaying Dark Matter can explain the electron/positron excesses."**
   Autori: E. Nardi, F. Sannino and A. Strumia,
   – JCAP **0901**, 043 (2009) [arXiv:0811.4153 [hep-ph]]. (21 pp.)
5. **"Leptogenesis."**
   Autori: S. Davidson, E. Nardi and Y. Nir,
   – Phys. Rept. **466**, 105-177 (2008). (74 pp.)
6. **"The importance of flavor in leptogenesis."**
   Autori: E. Nardi, Y. Nir, E. Roulet and J. Racker
   – JHEP **0601**, 164, 2006. (27 pp).
7. **"Renormalization group induced neutrino masses in supersymmetry without R-parity."**
   Autori: E. Nardi.
   – Physical Review **D55**, (1997) 5772. (8 pp).
8. **"First limit on inclusive $B \to X_s \bar{\nu}\nu$ decay and constraints on new physics."**
   Autori: Y. Grossman, Z. Ligeti and E. Nardi.
   – Nuclear Physics **B 465** (1996) 369. [Err.-ibid. B **480**, 753 (1996)] (30+2 pp).
9. **"Supersymmetry without R parity and without Lepton Number."**
   Autori: T. Banks, Y. Grossman, E. Nardi and Y. Nir.
   – Physical Review **D 52**, n. 9 (1995) (5319). (7 pp).
10. **"μ–e conversion in nuclei and Z$'$ physics."**
    Autori: José Bernabéu, Enrico Nardi and Daniele Tommasini.
    – Nuclear Physics **B 409**, (1993) 69. (18 pp).

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January 2007 – October 2014 University Researcher in Theoretical Physics
Roma Tre University, Rome

November 2005 – December 2006 Post-doc grant, for research activity in Theoretical Physics
Technische Universitaet Muenchen, Munich

Education and pre-doctoral positions

February 2006 Ph. D. in Theoretical Physics
Roma Tre University, Rome
Advisor: prof. Vittorio Lubicz

2002 INFN pre-doctoral fellow
Roma Tre University, Rome

April 2002 Laurea degree in Theoretical Physics (Summa cum Laude)
Roma Tre University, Rome
Advisor: prof. Vittorio Lubicz

Awards

2006 Sergio Fubini 2006 prize, for three Ph. D. theses in Theoretical Physics
National Institute of Nuclear Physics (INFN) Theory Group

2005 Young Women in Physics 2005 prize, for young female researchers in Physics
Physics Department, Roma Tre University

2005 Best Ph. D. Seminar 2005 prize
Physics, Astronomy and Material Science Departments of the three Universities of Rome

2002 Antonio Stanghellini 2002 fellow for graduated students in Physics
Italian Physics Society (SIF)

2002 Galluzzi 2002 prize for Physics, for a graduated student in Physics
Roma Tre University

Research activity

Research interests **Flavor Physics, Lattice QCD**

Synthetic description of the field

The study of the flavor sector of the Standard Model (SM) deals with fundamental questions which are still open in particle physics. Within the SM there is no explanation for the great hierarchy among different fermion masses, nor for the presence of three families, nor for the structures of the mixing matrices, which are very different between the quark sector (Cabibbo-Kobayashi-Maskawa matrix) and the lepton sector (Pontecorvo-Maki-Nakagawa-Sakata matrix). Moreover, the mixing among different flavors of quarks represents the only source of CP-violation in the Standard Model, an effect which has been proven to be too small, however, to explain the observed dominance of matter over anti-matter in the Universe. This observation provides therefore a strong hint for the existence of new sources of CP-violation beyond the SM. Research activities in Flavor Physics aims at clarifying these open questions by testing the SM itself with increasing accuracy and by searching New Physics (NP) effects through indirect searches, i.e. by looking at processes that are sensitive to virtual (loop) contributions of NP particles. In the last years a new era of exploration has started with the coming into operation of the Large Hadron Collider (LHC) at CERN. From the theory side, it will be crucial to keep pace with the experimental accuracy, with Lattice QCD simulations playing a fundamental role in the determination of the non-perturbative hadronic parameters, which often enclose the main source of theoretical uncertainty.

Citations

My (about 50) published papers count about 4400 citations on the inSPIRE.net database.

They include 3 famous (more than 250 citations) papers, 14 very well known (100-250 citations) papers and 15 well known (50-99 citations) papers.

International scientific collaborations

UTfit collaboration, composed of Theorists and Experimentalists from various European nations, working at the determination of the parameters of the Cabibbo-Kobayashi-Maskawa matrix

European Twisted Mass collaboration (ETMC), composed of Lattice QCD experts from various European nations, working at the computation of quantities of interest for High Energy Physics

Research programs

2010-2012 Participant in the **Prin 2008** research program on “Predictions and theoretical proposals for present and future experiments in particle physics”

2013-2016 Participant in the **Prin 2012** research program on “Symmetries, masses and mysteries: electroweak symmetry breaking, flavor mixing and CP-violation, dark matter in the LHC era”

2017-2020 Participant in the **Prin 2015** research program on “Search for the Fundamental Laws and Constituents”

Invited talks at conferences and workshops

May 2014 Planck 2014, 17th International Conference From the Planck Scale to the Electroweak Scale, Paris
plenary review talk

September 2013 SIF 2013, XCIX Congresso Nazionale della Società Italiana di Fisica, Trieste

September 2013 WIN 2013, The XXIV Workshop on weak interactions and neutrinos, Natal (Brazil)
theory summary talk

July 2012 ICHEP’12, XXXVI International Conference on High Energy Physics, Melbourne (Australia)
plenary review talk

June 2012 Lattice 2012 The XXX International Symposium on Lattice Field Theory, Cairns (Australia)
plenary review talk

June 2012 International Collaboration Meeting “Super B IV”, Isola d’Elba

May 2012 The V International Workshop on Charm Physics, Honolulu (Hawaii)

September 2011 The XV Workshop on Statistical Mechanics and nonperturbative Field Theory, Bari

April 2011 Incontri sulla Fisica delle Alte Energie, IFAE 2011, Perugia

October 2010 International Conference “Heavy Quarks and Leptons 2010”, Frascati National Laboratories (LNF)

October 2009 V_{xb} Workshop, SLAC (USA)

April 2009 Ringberg Workshop on New Physics, Flavors and Jets, Ringberg Castle, Rottach-Egern

January 2008 V Workshop Italiano sulla Fisica p-p ad LHC, Perugia

May 2007 International Conference “Kaon’07”, Frascati National Laboratories (LNF)

April 2007	Incontri sulla Fisica delle Alte Energie, XVIII-IFAE, Napoli
December 2006	CKM 2006: Workshop on the Unitarity Triangle, Nagoya (Japan)
November 2006	International Workshop “Super B IV”, Villa Mondragone, Monte Porzio Catone
October 2006	International Conference “Heavy Quarks and Leptons 2006”, Munich
May 2006	Flavor in the LHC Era-3rd Workshop on the Interplay of Flavor and Collider Physics, CERN Geneva
June 2005	Beauty 2005: 10th International Conference on B-Physics at Hadron Machines, Assisi
April 2005	Workshop on Effective Field Theory, QCD and Heavy Hadrons, Seattle (USA)
March 2005	CKM 2005: Workshop on the Unitarity Triangle, San Diego (USA)
April 2004	Incontri sulla Fisica delle Alte Energie, XVI-IFAE, Torino
July 2003	International Europhysics Conference on High Energy Physics, EPS HEP 2003, Aachen
April 2002	Incontri sulla Fisica delle Alte Energie, XIV-IFAE, Parma

Organization of scientific conferences, workshops and schools

September 2014	International Advisory Committee of the Doctoral School on Lattice Gauge Theories, Parma
June 2014	International Advisory Committee of the XXXII International Symposium on Lattice Field Theory, New York (USA)
April 2014	Convener of “Incontri di Fisica delle Alte Energie”, Gran Sasso National Laboratories
September 2013	Convener of the XXIV Workshop on weak interactions and neutrinos, Natal (Brazil)
July 2013	International Advisory Committee of the XXXI International Symposium on Lattice Field Theory, Mainz
July 2011	Convener of the International Europhysics Conference on High Energy Physics, Grenoble
June 2010	Local Organizing Committee of the XXVIII International Symposium on Lattice Field Theory, Cagliari
February 2010	Local Organizing Committee of the Galileo Galilei Institute (GGI) Workshop on “Indirect Searches for New Physics at the time of LHC”, Firenze
December 2009	Convener of the X SuperB Physics Workshop, Frascati National Laboratories (LNF)
April 2009	Convener of the VIII SuperB Physics Workshop, Warwick
September 2008	Convener of the V International Workshop on the CKM Unitarity Triangle, Roma

Teaching

Lectures of Physics of Fundamental Interactions (master, 8 CFU), Roma Tre University
AY 2018/2019, AY 2017/2018, 2016/2017, 2015/2016, 2013/2014, 2012/2013, 2011/2012

Exercises of Quantum Mechanics (bachelor, 3 CFU), Roma Tre University
AY 2018/2019, AY 2017/2018, 2016/2017, 2015/2016, 2013/2014, 2012/2013, 2011/2012, 2009/2010, 2008/2009, 2007/2008, 2004/2005, 2003/2004

Lectures of Quantum Mechanics (TFA and PAS for High School teachers), Roma Tre University
AY 2013/2014, 2012/2013

Lectures of Quantum Field Theory (master, 6 CFU), Roma Tre University
AY 2009/2010, 2007/2008

Exercises of Theoretical Physics (in English), Tecnische Universitaet Muenchen, Munich
AY 2006/2007, 2005/2006

Exercises of Statistical Mechanics (in English), Tecnische Universitaet Muenchen, Munich
AY 2005/2006

Lectures on Flavor Physics (ICTP Summer School on Particle Physics), Trieste, June 2011

Supervision of theses

AY 2018/2019	Silvia Peragallo (diploma student in Physics, Roma Tre University)
	Title of the thesis: *Applications of the time-dependent perturbation theory*
AY 2018/2019	Antonio Caporale (diploma student in Physics, Roma Tre University)
AY 2017/2018	Simone Romiti (master student in Physics, Roma Tre University)
	Title of the thesis: *Optimization techniques in the lattice calculation of the hadronic contribution to the muon anomaly*
AY 2016/2017	Fabio Grimaldi (diploma student in Physics, Roma Tre University)
	Title of the thesis: *Study of the WKB method and application to the alpha decay*
AY 2015/2016	Alessio Mattia Leonardi (diploma student in Physics, Roma Tre University)
	Title of the thesis: *Perturbation theory at high orders in quantum mechanics and its numerical applications*
AY 2013/2014	Matteo Stasi (diploma student in Physics, Roma Tre University)
	Title of the thesis: *WKB method for the semiclassical approximation and application to the tunnel diod*
AY 2013/2014	Daniele Carlotti (diploma student in Physics, Roma Tre University)
	Title of the thesis: *Isotropic harmonic oscillator in three dimensions*
AY 2012/2013	Elena La Preziosa (master student in Mathematics, Roma Tre University)
	Title of the thesis: *Variational method applied to hydrogen ion molecule*
AY 2011/2012	Paolo Lami (master student in Physics, Roma Tre University)
	Title of the thesis: *Determination of quark masses and decay constants from Nf=2+1+1 Lattice QCD*
AY 2010/2011	Elisa Giunta (student in Mathematics, Roma Tre University)
	Title of the thesis: *WKB method: application to the double well potential*

Activities of public dissemination of science

2011, 2012, 2014, 2016, 2017	Introductory lecture on Quantum Mechanics
	Masterclass in Particle Physics, INFN (Roma Tre Section) and Roma Tre University
2014	Presentation of the Department research activities based on numerical simulations
	Open Day, Mathematics and Physics Department, Roma Tre University

Referee activities

2015 – present	Member of REPRISE (Register of Expert Peer Reviewers for Italian Scientific Evaluation)
2006 – present	Referee for journals:
	JHEP, European Physical Journal C, Nuclear Physics B, Physical Review D, Physical Review Letters, Physics Letters B
2013	Referee of the Ph. D. theses
	Title: Meson-antimeson oscillations in the SM and beyond from unquenched TM-Lattice QCD
	Student: Nuria Carrasco Vela (Valencia University)
	Title: Decays of the B-mesons to the first-orbitally excited D** mesons
	Student: Mariam Atoui (Particle Physics Laboratory, Clermont-Ferrand)
2008 – present	Referee of several diploma and master theses

University/Department/INFN activities

June 2016 – present	**Member of the Roma Tre Evaluation Nucleus** (Evaluation of the University Quality in Teaching and Research)
November 2015 – present	**Member of the University Scientific Committee for the VQR** (Evaluation of Research Quality)
2013 – present	**National Coordinator of the INFN research line on Lattice QCD named LQCD123**
2016	Member of the Committee for the entrance examination to the Physics Ph.D.
2014	**Coordinator of PAS038** (course for the qualification of High School Physics teachers)
2015 – 2018	Member of the Physics Didactic Committee

2013 – present	Member of the Physics Doctoral School Committee
2013	Member of the Joint (professors-students) Committee of the Mathematics and Physics Department
2013 – 2014, 2018 – present	Member of the INFN (Roma Tre Section) Committee for postdoc fellowships in Theoretical Physics

Publications

V. Lubicz *et al.* [ETM Collaboration],
Tensor form factor of $D \to \pi(K)\ell\nu$ and $D \to \pi(K)\ell\ell$ decays with $N_f = 2+1+1$ twisted-mass fermions
Phys. Rev. D **98** (2018) no.1, 014516, [arXiv:1803.04807 [hep-lat]].

D. Giusti *et al.* ,
First lattice calculation of the QED corrections to leptonic decay rates
Phys. Rev. Lett. **120** (2018) no.7, 072001, [arXiv:1711.06537 [hep-lat]].

V. Lubicz *et al.* [ETM Collaboration],
Scalar and vector form factors of $D \to \pi(K)\ell\nu$ decays with $N_f = 2+1+1$ twisted fermions
Phys. Rev. D **96** (2017) no.5, 054514, [arXiv:1706.03017 [hep-lat]].

D. Giusti, V. Lubicz, C. Tarantino, G. Martinelli, S. Sanfilippo, S. Simula and N. Tantalo
Leading isospin-breaking corrections to pion, kaon and charmed-meson masses with Twisted-Mass fermions
Phys. Rev. D **95** (2017) no.11, 114504, [arXiv:1704.06561 [hep-lat]].

A. Bussone *et al.* [ETM Collaboration]
Mass of the b quark and B -meson decay constants from N_f=2+1+1 twisted-mass lattice QCD
Phys. Rev. D **93** (2016) no.11, 114505, [arXiv:1603.04306 [hep-lat]].

N. Carrasco, P. Lami, V. Lubicz, L. Riggio, S. Simula and C. Tarantino [European Twisted Mass Collaboration]
$K \to \pi$ semileptonic form factors with $N_f = 2+1+1$ twisted mass fermions
Phys. Rev. D **93** (2016) no.11, 114512, [arXiv:1602.04113 [hep-lat]].

N. Carrasco *et al.* [European Twisted Mass Collaboration]
ΔS=2 and ΔC=2 bag parameters in the standard model and beyond from N_f=2+1+1 twisted-mass lattice QCD
Phys. Rev. D **92** (2015) 3, 034516, [arXiv:1505.06639 [hep-lat]].

N. Carrasco *et al.*
QED Corrections to Hadronic Processes in Lattice QCD
Phys. Rev. D **91** (2015) 7, 074506, [arXiv:1502.00257 [hep-lat]].

N. Carrasco *et al.* [European Twisted Mass Collaboration]
Leptonic decay constants f_K, f_D, and f_{D_s} with $N_f = 2+1+1$ twisted-mass lattice QCD
Phys. Rev. D **91** (2015) 5, 054507, [arXiv:1411.7908 [hep-lat]].

N. Carrasco *et al.* [European Twisted Mass Collaboration]
D-Dbar Mixing in the Standard Model and Beyond from Nf=2 Twisted Mass QCD
Phys. Rev. D **90** (2014) 1, 014502, [arXiv:1403.7302 [hep-lat]].

N. Carrasco *et al.* [European Twisted Mass Collaboration]
Up, down, strange and charm quark masses with Nf = 2+1+1 tmLattice QCD
Nucl. Phys. B **887** (2014) 19 [arXiv:1403.4504 [hep-lat]].

A. J. Bevan *et al.* [UTfit Collaboration]
The UTfit collaboration average of D meson mixing data: Winter 2014
JHEP **1403** (2014) 123, [arXiv:1402.1664 [hep-ph]].

N. Carrasco *et al.* [European Twisted Mass Collaboration]
B-physics from $N_f = 2$ tmQCD: the Standard Model and beyond
JHEP **1403** (2014) 016, [arXiv:1308.1851 [hep-lat]].

V. Bertone *et al.* [European Twisted Mass Collaboration]
Kaon Mixing Beyond the SM from $N_f = 2$ tmQCD and model independent constraints from the UTA
JHEP **1303** (2013) 089, [arXiv:1207.1287 [hep-lat]].

A. J. Bevan *et al.* [UTfit Collaboration]
The UTfit Collaboration Average of D meson mixing data: Spring 2012
JHEP **1210** (2012) 068, [arXiv:1206.6245 [hep-ph]].

D. Becirevic *et al.*
D-meson decay constants and a check of factorization in non-leptonic B-decays
JHEP **1202** (2012) 042, [arXiv:1201.4039 [hep-lat]].

G. M. de Divitiis *et al.*
Isospin breaking effects due to the up-down mass difference in Lattice QCD
JHEP **1204** (2012) 124, [arXiv:1110.6294 [hep-lat]].

P. Dimopoulos *et al.* [European Twisted Mass Collaboration]
Lattice QCD determination of m_b, f_B and f_{Bs} with twisted mass Wilson fermions
JHEP **1201** (2012) 046, [arXiv:1107.1441 [hep-lat]].

B. Blossier *et al.* [European Twisted Mass Collaboration]
Average up/down, strange and charm quark masses with $N_f = 2$ twisted mass lattice QCD
Phys. Rev. D **82** (2010) 114513, [arXiv:1010.3659 [hep-lat]].

B. Blossier *et al.* [European Twisted Mass Collaboration]
A proposal for B-physics on current lattices
JHEP **1004** (2010) 049, [arXiv:0909.3187 [hep-lat]].

M. Bona *et al.* [UTfit Collaboration]
An Improved Standard Model Prediction of $BR(B \to \tau\nu)$ and Its Implications for New Physics
Phys. Lett. B **687** (2010) 61, [arXiv:0908.3470 [hep-ph]].

M. Blanke, A. J. Buras, B. Duling, S. Recksiegel and C. Tarantino
FCNC Processes in the Littlest Higgs Model with T-Parity: a 2009 Look
Acta Phys. Polon. B **41** (2010) 657, [arXiv:0906.5454 [hep-ph]].

V. Lubicz, F. Mescia, S. Simula and C. Tarantino [European Twisted Mass Collaboration]
$K \to \pi$ Semileptonic Form Factors from Two-Flavor Lattice QCD
Phys. Rev. D **80**, 111502(R) (2009), [arXiv:0906.4728 [hep-lat]].

B. Blossier *et al.* [European Twisted Mass Collaboration]
Pseudoscalar decay constants of kaon and D-mesons from $N_f = 2$ twisted mass Lattice QCD
JHEP **0907** (2009) 043, [arXiv:0904.0954 [hep-lat]].

M. Blanke, A. J. Buras, S. Recksiegel and C. Tarantino
The Littlest Higgs Model with T-Parity Facing CP-Violation in $B_s - \bar{B}_s$ Mixing
arXiv:0805.4393 [hep-ph].

G. Buchalla *et al.*
B, D and K decays
Eur. Phys. J. C **57** (2008) 309 [arXiv:0801.1833 [hep-ph]].

M. Raidal *et al.*
Flavor physics of leptons and dipole moments
Eur. Phys. J. C **57** (2008) 13 [arXiv:0801.1826 [hep-ph]].

B. Blossier *et al.* [European Twisted Mass Collaboration]
Light quark masses and pseudoscalar decay constants from $N_f = 2$ Lattice QCD with twisted mass fermions
JHEP **0804** (2008) 020, [arXiv:0709.4574 [hep-lat]].

M. Blanke, A. J. Buras, S. Recksiegel, C. Tarantino and S. Uhlig
Correlations between epsilon'/epsilon and Rare K Decays in the Littlest Higgs Model with T-Parity
JHEP **0706** (2007) 082, [arXiv:0704.3329 [hep-ph]].

M. Blanke, A. J. Buras, S. Recksiegel, C. Tarantino and S. Uhlig
Littlest Higgs model with T-parity confronting the new data on D0 anti-D0 mixing
Phys. Lett. B **657** (2007) 81, [arXiv:hep-ph/0703254].

M. Blanke, A. J. Buras, B. Duling, A. Poschenrieder and C. Tarantino
Charged lepton flavor violation and (g-2)(mu) in the littlest Higgs model with T-parity: A clear distinction from supersymmetry
JHEP **0705** (2007) 013, [arXiv:hep-ph/0702136].

M. Blanke, A. J. Buras, A. Poschenrieder, S. Recksiegel, C. Tarantino, S. Uhlig and A. Weiler
Rare and CP-violating K and B decays in the littlest Higgs model with T-parity
JHEP **0701** (2007) 066, [arXiv:hep-ph/0610298].

M. Blanke, A. J. Buras, A. Poschenrieder, S. Recksiegel, C. Tarantino, S. Uhlig and A. Weiler
Another look at the flavor structure of the littlest Higgs model with T-parity
Phys. Lett. B **646** (2007) 253, [arXiv:hep-ph/0609284].

D. Becirevic, P. Boucaud, V. Lubicz, G. Martinelli, F. Mescia, S. Simula and C. Tarantino
Exploring twisted mass lattice QCD with the clover term
Phys. Rev. D **74** (2006) 034501, [arXiv:hep-lat/0605006].

M. Blanke, A. J. Buras, D. Guadagnoli and C. Tarantino
Minimal flavor violation waiting for precise measurements of ΔM_s, $|V_{ub}|$, γ and $B^0_{s,d} \to \mu^+\mu^-$
JHEP **0610** (2006) 003, [arXiv:hep-ph/0604057].

D. Becirevic, B. Blossier, Ph. Boucaud, V. Gimenez, V. Lubicz, F. Mescia, S. Simula and C. Tarantino
Non-perturbatively renormalised light quark masses from a lattice simulation with $N_f = 2$
Nucl. Phys. B **734** (2006) 138, [arXiv:hep-lat/0510014].

D. Becirevic, G. Isidori, V. Lubicz, G. Martinelli, F. Mescia, S. Simula and C. Tarantino
The $K \to \pi$ vector form-factor at zero momentum transfer on the lattice
Nucl. Phys. B **705** (2005) 339, [arXiv:hep-lat/0403217].

M. Ciuchini, E. Franco, V. Lubicz, F. Mescia and C. Tarantino
Lifetime differences and CP violation parameters of neutral B-mesons at the next-to-leading order in QCD

JHEP **0308** (2003) 031, [arXiv:hep-ph/0308029].

D. Becirevic, V. Lubicz, F. Mescia and C. Tarantino [SPQcdR Collaboration]
Coupling of the light vector meson to the vector and to the tensor current
JHEP **0305** (2003) 007, [arXiv:hep-lat/0301020].

D. Becirevic, V. Lubicz and C. Tarantino [SPQcdR Collaboration]
Continuum determination of light quark masses from quenched lattice QCD
Phys. Lett. B **558** (2003) 69, [arXiv:hep-lat/0208003].

E. Franco, V. Lubicz, F. Mescia and C. Tarantino
Lifetime ratios of beauty hadrons at the next-to-leading order in QCD
Nucl. Phys. B **633** (2002) 212, [arXiv:hep-ph/0203089].

Stefania De Curtis

Biography

I was born in Florence on January 29, 1959. After my undergraduate studies at the University of Florence, I moved to Trieste for my Ph.D at the International School of Advanced Studies (SISSA). I spent several periods at the Theory Division of the Physics Department of the Geneva University, first with a "Fondazione A. Della Riccia" grant and after with the partial support of the Swiss National Science Foundation. I won a national competition for secondary school professorships of Mathematics and Physics. I got an INFN fellowship just before the permanent position as a researcher of the Florence Section. I presently live and work in Florence as a First Researcher of the INFN and often visit the CERN theory division in Geneva.

I got the "**Abilitazione Scientifica Nazionale**" DD 222 20/7/2012 - sector A2/02 (Fisica Teorica delle Interazioni Fondamentali) Prima Fascia - valid from January 8, 2014 to January 8, 2020.

Education

- **1972 - 1977** Liceo Scientifico "Leonardo da Vinci", Firenze, Italy. Scientific Lyceum Diploma
- **April 1983** B.S. in Physics. Florence University, IT (110/110, summa cum laude). Thesis: Study of the Dynamical Breaking of the Chiral Symmetry with the Effective Action method. Advisor R. Casalbuoni
- **October 1987** Ph.D. in Physics (Elementary Particle), SISSA Trieste, Thesis: "Dynamical symmetry breaking in QCD and quark masses" Supervisor R. Casalbuoni

Professional Experience

- **1983 - 1985** Ph.D Fellow, SISSA Trieste
- **1984** "Fondazione A. Della Riccia" grant at the Theory Division of the Physics Dept. of Geneva University
- **1985 - 1987** Professor in the Secondary School teaching Mathematics and Physics
- **1987 - 1988** INFN grant (competition 971/86)
- **1988** Researcher INFN Firenze (competition 973/86) 2000 - 2007
- **2000- 2007** Professor on contract teaching "Physics Foundations" , "Physics Didactics" and "Physics Laboratory" at the Faculty of Education Science of the Florence University
- **2002 - present** First Researcher INFN Firenze (competition 8680/2001)
- **2005- present** Professor on contract teaching "Quantum Field Theory" at the Physics Department of the Florence University

Teaching and Third Mission Activities

- **1995 - 1996** Course of "Theoretical Physics" for the XI Cycle of Physics Doctorate of the Florence University
- **1998 - 1999** Integrative Course of "Foundation of Theoretical Physics" for the "Corso di Laurea in Fisica" Florence University
- **1999 - 2000** Course of "Theory of the Fundamental Interactions" for the XV Cycle of the Physics Doctorate of the Florence University
- **2000 - 2007** Courses of "Physics Foundations" , "Physics Didactics" and "Physics Laboratory" for the "Corso di Laurea in Scienze della Formazione Primaria" at the Faculty of Education Science of the Florence University
- **2001 - 2002** Course of "Field Theory, Functional Methods and Renormalization" for the XVII Cycle of the Physics Doctorate of the Florence University (34 hours)
- **2002 - 2003** Course of "Elementary Particle Physics" for the for the "Corso di Laurea in Fisica" Florence University (67 hours)
- **2003 - 2004** Integrative Course of "Elementary Particle Physics" on "Recent aspects in theoretical physics of elementary particles" for the "Corso di Laurea in Fisica" Florence University (10 hours)
- **2003 - 2004** and **2006-2007** Course of "Non-abelian gauge theories, perturbative calculations", for the XIX and XXII Cycles of the Physics Doctorate of the Florence University (26 hours)
- **2007 - 2008** Course of "Strong Interactions: Theory and Phenomenology", for the XXIV Cycle of the Physics Doctorate of the Florence University (12 hours)
- **2005 - present** Course of "Field Theory" for the "Corso di Laurea Specialistica (Magistrale) in Fisica" Florence University (~ 35 hours each academic year)

- I've been the advisor of several thesis at Florence University for the degree in Educational Science, and for the Master and Ph.D degrees in Physics. Here are the last ones: Andrea Tesi (Analysis of an electroweak model with composite Higgs - 2011), Daniele Barducci (Phenomenological analysis of a minimal model with composite Higgs - 2011), Juri Fiaschi (One-loop corrections to the S parameter in an electroweak theory with extended symmetry - 2012), Elena Vigiani (Non minimal terms in models with Higgs Goldstone Boson - 2013), Carlotta Sacco (Dipoles in models with Higgs Goldstone Boson- 2014) , Fabio Berti (The Higgs Boson as a partially composite particle - 2017), Francesco Ciumei (Composite Higgs Model with UV completion - 2017), Simone Blasi (Non-minimal Higgs sector beyond the Standard Model - 2017)

Professional Activities

- **1994 - 1997** INFN Florence Researcher Representative
- **1998 - 2005** National Organizer of the INFN-CSN4 project "FI21- Dynamical Breaking of the Electroweak Symmetry and Physics Beyond the Standard Model"
- **2000-2006** INFN Florence Scientific Coordinator and internal referee of the CSN4 for "Elementary Particle Phenomenology"
- **2003** Member of the panel for the INFN Competition 9726/2003
- **2005 - present** Scientific Coordinator for the Florence node of the INFN-CSN4 project "PD21 (HEPCube)- High Energy Particle Physics Phenomenology
- **2005 - present** Member of the Local Organizing Committee of the Galileo Galilei Institute for Theoretical Physics (GGI) http://www.ggi.fi.infn.it//
- **2006 - present** Promoter of the Working Group "Phenomenology at a Future e+e-Collider", Organizer of several workshops and editor of the proceedings: "ILC Physics in Florence", Florence (2007), "LC08:e+e- Physics at the TeV Scale", Frascati (2008),"LC09: e+e− Physics at the TeV scale and the Dark Matter Connection", Perugia, 2009; "LC10: New Physics: complementarities between direct and indirect searches", Frascati 2010, "LC11 Workshop: Understanding QCD at linear colliders in searching for old and new physics", ECT* Trento, 2011; "LC13:Exploring QCD from the infrared regime to heavy flavour scales at B-factories, the LHC and a Linear Collider", ECT* Trento (2013); "Physics Prospects for Linear and other Future Colliders after the Discovery of the Higgs (LFC15)", ECT* Trento (2015); "Old and New Strong Interactions from LHC to Future Colliders (LFC17)", ECT* Trento (2017)
- **2007 - present** Member of the Scientific Board for the Doctorate in Physics & Astronomy of the Florence University
- **2007 - present** Member of the International Organizing Committee of the Johns Hopkins Workshops http://physics-astronomy.jhu.edu/workshops/
- **2010** Member of the panel for the INFN Competition 13708/2010
- **2010- present** INFN Delegate for the "Conferenza Regionale per la Ricerca e l'Innovazione" (Decreto del Presidente della Giunta della Regione Toscana n. 210 del 16/11/2010)
- **2012 - present** INFN Florence Scientific Coordinator and internal referee of the CSN4 for "Elementary Particle Phenomenology"
- **2012 - present** Scientific Vice-Director of the periodical "Il Colle di Galileo" - FUP Editor http://www.fupress.net/index.php/cdg
- **2012** Member of the Scientific Organizing Committee of the GGI workshop "Understanding the TeV Scale through LHC Data, Dark Matter and other experiments".
- **2013** Member of the Scientific Organizing Committee of the GGI workshop "Beyond the Standard Model after the first run of the LHC"
- **2013 - present** Coordinator of the GGI Ph.D Schools and Organizer of the GGI Ph.D Schools "Lectures on the Theory of Fundamental Interactions" http://www.ggi.fi.infn.it//index.php?p=schools.inc&id=147
- **2017 - present** Italian Representative Member to Plenary European Committee for Future Accelerators (ECFA)

Research

My research is in the field of particle physics. The main topic which has been present in a large part of my scientific activity is the dynamical symmetry breaking phenomenon both in strong and electroweak interactions. Concerning the latter, the final goal is to address the open problems of the Standard Model (SM) such as the Electroweak Symmetry Breaking (EWSB) mechanism and the related hierarchy problem. Recently my main interest has been on the phenomenological manifestations of New Physics (NP) phenomena in the high energy particle physics experiments. I'm working on the formulation of Beyond Standard Model (BSM) scenarios that may solve the above-mentioned problems and study their experimental manifestations at present and future particle accelerators. With an emphasis on the Higgs sector, the LHC is performing tests of the SM and of its extensions. By exploring the TeV scale, the LHC could discover any "natural" scenario of EWSB (the one of a pseudo-Nambu Goldstone Boson Higgs for example, which is theoretically well motivated) or exclude it and confirm the SM. This will tell us whether a cancellation is taking place in the Higgs mass, because the NP scale is very high (unnatural scenario), or instead, the Higgs mass is stabilized by some mechanism. Independently of the

result, clarifying this point will be a very important legacy of the LHC and will change our perspective on the physics of fundamental interactions. I'm author of ~ 95 published papers, ~ 30 contributions to conferences, ~ 30 workshop contributions. The complete list of my publications can be found at http://inspirehep.net by searching "a de curtis,s".

Main Papers

R.Casalbuoni, S.De Curtis, D.Dominici and R.Gatto, Physical implications of possible J = 1 bound states from strong Higgs, Nucl. Phys. B282, 235 (1988)

A.Barducci, R.Casalbuoni, S.De Curtis, D.Dominici and R.Gatto, Dynamical chiral symmetry breaking in QCD and determination of quark masses, Phys. Rev. D38, 238 (1988)

R.Casalbuoni, S.De Curtis, D.Dominici, F.Feruglio and R.Gatto, Non-linear Realization of Supersymmetry Algebra From Supersymmetric Constraint, Phys. Lett. B220, 569 (1989)

A.Barducci, R.Casalbuoni, S.De Curtis, R.Gatto and G.Pettini, Chiral phase transition in QCD for finite temperature and density, Phys. Rev. D41, 1610 (1990)

R.Casalbuoni, P.Chiappetta, S.De Curtis, F.Feruglio, R.Gatto, B.Mele and J.Terron,Testing for a possible strong-interacting electroweak symmetry breaking sector at LHC and SSC, Phys. Lett. B249, 130 (1990)

G.Altarelli, R.Casalbuoni, S.De Curtis, N.Di Bartolomeo, F.Feruglio and R.Gatto, Improved bounds on extended gauge models from new LEP data, Phys. Lett. B263, 459 (1991)

R.Casalbuoni, A.Deandrea, S.De Curtis, D.Dominici, R.Gatto and M.Grazzini, Low energy strong electroweak sector with decoupling, Phys. Rev. D53, 5201 (1996)

R.Casalbuoni, S.De Curtis, D.Dominici and R.Gatto, SM Kaluza-Klein Excitations and Electroweak Precision Tests, Phys. Lett. B462, 48 (1999)

R.Casalbuoni, S.De Curtis, D.Dominici and R.Gatto, Bounds on new physics from the new data on parity violation in atomic cesium, Phys.Lett. B 460, 135 (1999)

R.Casalbuoni, S.De Curtis and D.Dominici, Moose models with vanishing S parameter, Phys. Rev. D 70, 055010 (2004)

R.Casalbuoni, S.De Curtis, D.Dolce and D.Dominici, Playing with fermion couplings in Higgsless models, Phys. Rev. D 71, 075015 (2005)

G.Cacciapaglia, A.Deandrea and S.De Curtis, Nearby resonances beyond the Breit-Wigner approximation, Phys. Lett.B 682, 43 (2009)

E.Accomando, S.De Curtis, D.Dominici and L.Fedeli, Drell-Yan production at the LHC in a four site Higgsless model, Phys. Rev. D 79, 055020 (2009).

E.Accomando, D.Becciolini, S.De Curtis, D.Dominici, L.Fedeli and C.Shepherd-Themistocleous, Interference effects in heavy W'-boson searches at the LHC, Phys. Rev. D 85, 115017 (2012)

S.De Curtis, M.Redi and A.Tesi, The 4D Composite Higgs, JHEP 1204, 042 (2012)

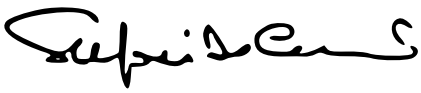
D.Barducci, A.Belyaev, M.S.Brown, S.De Curtis, S.Moretti and G.M.Pruna, The 4-Dimensional Composite Higgs Model (4DCHM) and the 125 GeV Higgs-like signals at the LHC, JHEP 1309, 047 (2013)

D.Barducci, A.Belyaev, S.De Curtis, S.Moretti and G.M.Pruna, Exploring Drell-Yan signals from the 4D Composite Higgs Model at the LHC, JHEP 1304, 152 (2013)

D.Barducci, S.De Curtis, S.Moretti and G.M.Pruna, Top pair production at a future e+e- machine in a composite Higgs scenario, JHEP 1508, 127 (2015)

E.Accomando, D.Barducci, S.De Curtis, J.Fiaschi, S.Moretti and C.H.Shepherd-Themistocleous, Drell-Yan production of multi Z'-bosons at the LHC within Non-Universal ED and 4D Composite Higgs Models, JHEP 1607 (2016) 068

A.Agugliaro, O.Antipin, D.Becciolini, S.De Curtis and M.Redi, UV complete composite Higgs models, Phys.Rev.D 95 no. 3, 035019 (2017)



CURRICULUM VITAE

Nome: Gennaro Corcella
E-mail : gennaro.corcella@lnf.infn.it

ATTIVITÀ SCIENTIFICA

Luglio 1995: Laurea in Fisica, Università di Bari, con voto 110/110 e Lode.
Titolo della tesi di laurea: "Simmetria CPT e Mesoni B".

Novembre 1995 - Ottobre 1999: Dottorato di ricerca in Fisica, Università di Milano.

Febbraio 2000: conseguimento del titolo di Dottore di Ricerca in Fisica, Università di Milano, con giudizio "ottimo".
Titolo della tesi di dottorato di ricerca: "Parton Showers in High Energy Physics" (in inglese).

Novembre 1999 - Ottobre 2001: Postdoctoral Research Associate, Università di Rochester, NY, U. S. A.

Novembre 2001 - Novembre 2003: Postdoctoral Research Associate, Max-Planck-Institut für Physik, Werner-Heisenberg-Institut, Monaco di Baviera, Germania.

Dicembre 2003 - Novembre 2005: Postdoctoral Fellow presso il CERN, Department of Physics, Theory Division, Ginevra, Svizzera.

Dicembre 2005 - Settembre 2007: Titolare di contratto di collaborazione coordinata e continuativa presso il dipartimento di fisica dell'Università degli Studi di Roma 'La Sapienza'.

Ottobre 2007 - Dicembre 2007: Short-term visitor presso il il CERN, Department of Physics, Theory Division, Ginevra, Svizzera.

Gennaio 2008 - Dicembre 2010: borsista presso la Scuola Normale Superiore di Pisa, come titolare di un Junior Grant del Museo Storico della Fisica, Centro Studi e Ricerche 'Enrico Fermi'.

Da Gennaio 2011: Ricercatore di III livello presso INFN, Laboratori Nazionali di Frascati.

Abilitazione Scientifica Nazionale per il settore concorsuale 02/A2 (Fisica teorica delle interazioni fondamentali) - II Fascia - Tornata 2012.

Altri periodi trascorsi all'estero

Settembre 1998 - Giugno 1999: attività di ricerca svolta presso il Rutherford Appleton Lab-

oratory, Particle Physics Department, Theory Group, Chilton, Oxfordshire, Regno Unito.

Luglio 1999 - Ottobre 1999: attività di ricerca svolta presso il CERN, Theory Division, Ginevra, Svizzera.

Agosto 2001: attivitá di ricerca presso il Fermilab, Theory Division, Batavia, IL, U. S. A.

Marzo 2006: attivitá di ricerca presso la Universidad Autónoma de México (UNAM) di Città del Messico, in relazione al progetto HELEN (High Energy Physics Latinamerican-European Network).

Agosto 2007: attivitá di ricerca presso l'Università di Buenos Aires, in relazione al progetto HELEN.

Presentazioni a conferenze e workshop

"Verifica della Simmetria CPT nel Sistema dei Mesoni B", Convegno di Fisica Teorica, Como, Italia, Giugno 1997.

"Gluon Radiation in Top Decays", ECFA/DESY Linear Collider Workshop (top quark working group), Frascati, Italia, Novembre 1998.

"Simulation of Gluon Radiation in Top Production and Decay", Workshop on Standard Model Physics (and more) at the LHC (top quark working group), CERN, Ginevra, Svizzera, Gennaio 1999.

"Radiative Corrections to Monte Carlo Simulation of Drell–Yan Processes", Workshop on Standard Model Physics (and more) at the LHC (QCD working group), CERN, Ginevra, Svizzera, Gennaio 1999.

"Matrix Element Corrections to Top Decays and Impact on Jet Activity at the LHC", Workshop on Standard Model Physics (and more) at the LHC (top quark working group), CERN, Ginevra, Svizzera, Aprile 1999.

"Parton Shower Simulations in High Energy Physics", Graduate Student Symposium, Oxford, Regno Unito, Maggio 1999.

"Gluon Radiation in Vector Boson Production at Hadron Colliders", UK Phenomenology Workshop on Collider Physics (QCD working group), Durham, Regno Unito, Settembre 1999.

"Issues on the Top Mass Reconstruction" UK Phenomenology Workshop on Collider Physics, (QCD working group), Durham, Regno Unito, Settembre 1999.

"Parton Showers in Vector Boson Production", Workshop on Standard Model Physics (and more) at the LHC (QCD working group), CERN, Ginevra, Svizzera, Ottobre 1999..

"Parton Showering in Top Production and Decay", Berkeley 2000, Linear Collider Workshop (top quark working group), Berkeley, CA, U. S. A., Marzo 2000.

"Gluon Radiation in Vector Boson Production", Pheno 2000 Symposium, Madison, WI, U. S. A., Aprile 2000.

"Vector Bosons at Hadron Colliders: Parton Showers and Resummations" MRST Meeting, Rochester, NY, U. S. A., Maggio 2000.

"Studies on the Top Mass Reconstruction at the Linear Collider" Linear Collider Workshop (top quark working group), Columbus, OH, U. S. A., Agosto 2000.

"Top Mass Reconstruction at the LHC", DPF 2000, Columbus, OH, U. S. A., Agosto 2000.

"Monte Carlo Studies of Top Production and Decay", Linear Collider Workshop - LCSW2000, Fermilab, Ottobre 2000.

"HERWIG for Top Physics", Thinkshop [2], Fermilab, Novembre 2000.

"Matrix-element Corrections to HERWIG", Monte Carlo Generator Physics for Run II at the Tevatron, Fermilab, U. S. A., Aprile 2001.

"Challenges in QCD Event Generators", Second Young-Researchers QCD-Network Meeting, Parma, Italia, Febbraio 2002.

"Top Decay and Bottom Fragmentation in NLO QCD", Recontres de Moriond, Les Arcs, Francia, Marzo 2002.

"Resummation in Top Quark Decay", Workshop on Tev-Scale Physics, Cambridge, Regno Unito, Luglio 2002.

"Challenges in Heavy Quark Fragmentation", Max-Planck-Institut Young Scientists' Workshop 2002, Ringberg Castle, Germania, Luglio 2002.

"Bottom Quark Mass Determination", QCD 03, Montpellier, Francia, Luglio 2003.

"Bottom Quark Mass Determination from Low-n Sum Rules", CERN Phenomenology Club, Marzo 2004.

"Matching HERWIG Parton Showers and Exact Matrix Elements", HERA and the LHC Workshop (multi-jet final states and energy flows working group), CERN, Marzo 2004.

"Bottom Quark Fragmentation in Top Quark Decay", Incontri di Fisica delle Alte Energie, Torino, Aprile 2004.

"Bottom Quark Mass Determination from Relativistic Sum Rules", Incontri di Fisica delle Alte Energie, Torino, Aprile 2004.

"Bottom Quark Fragmentation in Top Decay", QFTHEP 2004, Peterhof, S. Pietroburgo, Russia, Giugno 2004.

"Impact of Soft Resummation on Structure Functions", HERA and the LHC Workshop (parton distribution functions working group), CERN, Ottobre 2004.

"Resummed Dijet E_T Spectra in the k_t Algorithm", HERA and the LHC Workshop (multi-jet final states and energy flows working group), CERN, Gennaio 2005.

"Resummed Parton Distributions from Neutrino Data" HERA and the LHC Workshop (parton distribution functions working group), CERN, Gennaio 2005.

"Bottom Fragmentation in $H \to b\bar{b}$ Events", Incontri di Fisica delle Alte Energie, Catania, Marzo 2005.

"Impact of large-x Resummation on parton distributions", DIS05, Madison, WI, Aprile 2005.

"Summary talk of the Heavy Flavour Working Group", DIS05, Madison, WI, Maggio 2005.

"Bottom Fragmentation in Higgs and Top Decay", Workshop "Physics at TeV Colliders", Les Houches, Francia, Maggio 2005.

"Soft-resummation effects on parton densities", CERN Phenomenology Club, Agosto 2005.

"Bottom Quark Fragmentation in Top Quark Decay", TOP 2006, Coimbra, Portogallo, Gennaio 2006.

"Soft Resummation Corrections to Parton Distributions", Diffraction 2006, Adamantas, Milos, Grecia, Settembre 2006.

"Comparing Tuned Event Generators and Resummed Calculations for Bottom Quark Fragmentation", Monte Carlo Workshop MCWS, Frascati, Ottobre 2006.

"Studies of QCD and Top Quark Physics at the Linear Collider", Linear Collider Workshop, Frascati, Ottobre 2006.

"Parton showers and resummations for non-global observables", HERA and the LHC Workshop, DESY, Marzo 2007.

"Monte Carlo Generators for Top Physics at the LHC", V Workshop Italiano sulla Fisica *pp* a LHC, Perugia, Gennaio 2008.

"Heavy-Quark Fragmentation with an Effective Coupling Constant", Workshop on Parton Fragmentation Processes in the Vacuum and in the Medium, ECT*, Trento, Febbraio 2008.

"Sommario della Sessione di Modello Standard e Nuova Fisica", Incontri di Fisica delle Alte Energie, Bologna, Marzo 2008.

"Bottom quark fragmentation and impact on the uncertainty on the top mass reconstruction", workshop "Top quark physics: from the Tevatron to the LHC", CERN, Giugno 2009.

"Heavy-quark Fragmentation", International School of Subnuclear Physics, Erice, Settembre 2009.

"Towards Q-HERWIG: an angular-ordered parton shower generator for jet quenching", Joint CATHIE/TECHQM workshop, Brookhaven National Laboratory, Upton, NY, U. S. A., Dicembre 2009 (videoconferenza).

"Parton showers with medium-modified splitting functions", DIS 2010, Firenze, Aprile 2010.

"Heavy Flavours in DIS and Hadron Colliders: Theory Summary", DIS 2010, Firenze, Aprile 2010.

"Theoretical issues in top mass reconstruction at hadron colliders", TOP 2010, 3rd International Workshop on Top Quark Physics, Bruges (Belgio), Giugno 2010.

"Summary of the Open Heavy Flavour Working Group", Quarkonium 2010, Palaiseau, Francia, Luglio 2010.

"Parton showers with medium-modified splitting functions", istituto "The first heavy ion collisions at the LHC", CERN, Ginevra, Agosto 2010.

"Progress in medium-modified parton showers", Spring Institute, Laboratori Nazionali di Frascati, Italy, Marzo 2011.

"Z' production in an extended MSSM", DIS2012, Bonn, Germania, Marzo 2012.

"Z' production at the LHC in an extended MSSM", Rencontres de Blois, Blois, Francia, Maggio 2012.

"Supersymmetric contributions to Z' decays", Bari Theory Christmas Workshop, Bari, Dicembre 2012.

"Searching for supersymmetry in Z' decays", LHCP 2013, Barcelona, Spain, Maggio 2013.

"Bottom fragmentation in top decays and impact on the top mass reconstruction", Top Quark Working Group Plenary Meeting, CERN, Novembre 2013.

"Bottom fragmentation in top decays and impact on the top mass reconstruction", Bari Theory Christmas Workshop, Bari, Dicembre 2013.

"Hadronization systematics and top-quark mass", Top Quark Working Group Plenary Meeting, CERN, Maggio 2014.

"Bottom fragmentation in top decays and impact on the top mass measurement", QCD@work, Giovinazzo (BA), Giugno 2014.

"Perspectives in top quark and electroweak precision physics", What Next mid-term meeting, Laboratori Nazionali di Frascati, Aprile 2015.

"Summary of LNF workshop on the top-quark mass", Top Quark Working Group Plenary Meeting, CERN, Maggio 2015.

"Searching for supersymmetry in Z' decays at the LHC", PLANCK2015: 18th International Conference From the Planck Scale to the Electroweak Scale, Ioannina, Grecia, Maggio 2015.

"Interpretation of the top-quark mass measurements: a theory overview", TOP 2016, Ischia, Settembre 2015.

"Precision measurements of the top mass: theory vs experiment" FCC-ee Mini-Workshop 'Physics Behind Precision', CERN, Febbraio 2016.

"Searching for Supersymmetry and Dark Matter in Z' decays at LHC", DM 2016, Santander, Spagna, Giugno 2016.

"Challenges in Heavy-Quark Fragmentation", Workshop on Parton Radiation and Fragmentation from LHC to FCC-*ee*, CERN, Novembre 2016.

"Interpretation of the top-quark mass results", DIS 2017, Birmingham, UK, Aprile 2017.

"Supersymmetric signals in Z' decays", DIS 2017, Birmingham, UK, Aprile 2017.

"Supersymmetric signals in Z' decays", Spring Institute, Laboratori Nazionali di Frascati, Maggio 2017.

"Top-quark mass determination at LHC: a theory overview", EPS-HEP, Venezia, Luglio 2017.

"Supersymmetric signals in Z' decays at the LHC", EPS-HEP, Venezia, Luglio 2017.

"The top-quark mass: uncertainties due to b-quark fragmentation", QCD@LHC, Debrecen, Ungheria, Settembre 2017.

"Non-standard heavy vector bosons at the LHC", QCD@LHC, Debrecen, Ungheria, Settembre 2017.

"Z' bosons in supersymmetric and leptophobic scenarios", HL/HE-LHC Workshop, CERN, Giugno 2018.

"Bileptons at LHC", SUSY 2018, Barcellona, Spagna, Luglio 2018.

"The top-quark mass: uncertainties due to bottom fragmentation", SUSY 2018, Barcellona, Spagna, Luglio 2018.

"Loopholes in Z' searches: exploring supersymmetry and leptophobia", SUSY 2018, Barcellona, Spagna, Luglio 2018.

Seminari

"QCD Event Generators", Università di Bari, Italia, Novembre 1999.

"Matrix Element Corrections to Parton Shower Simulations", Michigan State University, East Lansing, MI, U. S. A., Dicembre 1999.

"Matrix Element Corrections to Parton Shower Simulations", University of Rochester, NY, U. S. A., Gennaio 2000.

"Matrix Element Corrections to Parton Shower Simulations": Rutherford Appleton Laboratory, Regno Unito, Febbraio 2000.

"Matrix Element Corrections to Parton Shower Simulations", University of Edinburgh, Regno Unito, Ottobre 2000.

"Matrix Element Corrections to Parton Shower Simulations", University of Manchester, Regno Unito, Ottobre 2000.

"Recent Progress in the Physics of QCD Event Generators", Università di Pavia, Italia, Ottobre 2000.

"Monte Carlo Parton Showers for High Energy Colliders", University of Michigan, Ann Arbour, MI, U. S. A., Marzo 2001.

"Theory and Simulation of Multiple Radiation in QCD", Università of Bari, Italia, Maggio 2001.

"Challenges in the Physics of QCD Event Generators", Fermilab, U. S. A., Agosto 2001.

"Physics of QCD Event Generators", Colloquium at Max-Planck-Institut für Physik, München, Germania, Gennaio 2002.

"Bottom Fragmentation in Top Quark Decay", Università di Milano–Bicocca, Italia, Febbraio 2002.

"QCD Analysis of Bottom Fragmentation in Top Decay", University of Cambridge, Regno Unito, Maggio 2002.

"QCD Analysis of Bottom Fragmentation in Top Decay", University of Manchester, Regno Unito, Maggio 2002.

"Fragmentation Functions and B-Hadron Production in Top Quark Decay", Università di Bari, Italia, Luglio 2002.

"Heavy Quark Fragmentation and B-Hadron Production in Top Quark Decay", Max-Planck-Institut für Physik, München, Germania, Novembre 2002.

"Physics of QCD Event Generators", Università di Lecce, Italia, Gennaio 2003.

"Fragmentation functions and B-Hadron Production in Top Quark Decay", Università of Lecce, Italia, Gennaio 2003.

"Top Quark Decay and Bottom Quark Fragmentation", University of Uppsala, Svezia, Marzo 2003.

"Matrix-element corrections to Monte Carlo Parton Showers", University of Uppsala, Svezia, Marzo 2003.

"Top Quark Decay and Bottom Quark Fragmentation", University of Lund, Svezia, Marzo 2003.

"Matrix-Element Corrections to Monte Carlo Parton Showers", University of Lund, Svezia, Marzo 2003.

"Precise QCD Calculations for Charged Current Deep Inelastic Scattering", Università of Milano–Bicocca, Italia, Ottobre 2003.

"Precise QCD Calculations for Charged Current Deep Inelastic Scattering", Max-Planck-Institut für Physik, München, Germania, Novembre 2003.

"Soft and Collinear Resummation from Top Decay to Deep Inelastic Scattering", CERN, Marzo 2004.

"Radiative Corrections to Deep Inelastic Scattering Processes", Università di Bari, Marzo 2004.

"Soft and Collinear Resummation from Top Decay to Deep Inelastic Scattering", Università di Firenze, Maggio 2004.

"Event Generators and Matrix Element Corrections", Università di Pisa, Maggio 2004.

"Matrix Element Corrections to Parton Shower Simulations", Moscow State University, Mosca, Russia, Giugno 2004.

"Progress in Heavy-Quark Fragmentation", Università di Milano–Bicocca, Ottobre 2004.

"Event Generators and Matrix Element Corrections", Università di Trento, Gennaio 2005.

"Progress in Heavy-Quark Fragmentation and Soft Resummation", Università di Roma 'La Sapienza', Giugno 2005.

"Monte Carlo Generators for High Energy Colliders", Università di Roma 'La Sapienza', Febbraio 2006.

"Monte Carlo Generators for High Energy Colliders", UNAM, Città del Messico, Marzo 2006.

"Monte Carlo Generators for High Energy Colliders", CINVESTAV, Città del Messico, Marzo 2006.

"Monte Carlo Generators for High Energy Colliders", Università di Padova, Ottobre 2006.

"Monte Carlo Generators for High Energy Colliders", Università di Pavia, Dicembre 2006.

"Monte Carlo Generators for High Energy Colliders", Scuola Normale Superiore di Pisa, Gennaio 2007.

"Monte Carlo Generators for High Energy Colliders", Università della Calabria, Febbraio 2007.

"Monte Carlo Generators for the LHC", Università di Roma Tor Vergata, Luglio 2007.

"Tutorial on the HERWIG event generator", Università di Roma Tor Vergata, Luglio 2007.

"Monte Carlo Generators for the LHC", Università di Buenos Aires, Argentina, Agosto 2007.

"Challenges in Heavy Quark Fragmentation", Università di La Plata, Argentina, Agosto 2007.

"New Physics Signals and Standard Model Backgrounds at the LHC", Centro E. Fermi, Roma, Settembre 2007.

"Simplified Models for New Physics Searches at the LHC", Journal Club, Scuola Normale Superiore, Pisa, Novembre 2008.

"Monte Carlo generators for Hadron Colliders", Università di Ferrara, Maggio 2009.

"Monte Carlo generators for the LHC", Universidad Autonoma de Madrid, Spagna, Ottobre 2010.

"Parton showers with medium-modified splitting functions", Laboratori Nazionali di Frascati, Italia, Marzo 2011.

"Towards angular-ordered parton showers for heavy-ion collisions", Laboratori Nazionali di Frascati, Italia, Marzo 2011.

"Supersymmetric contributions to Z' decays", Università di Louvain-la-Neuve, Belgio, Ottobre 2012.

"Supersymmetric contributions to Z' decays", Università di Bruxelles, Belgio, Ottobre 2012.

"Supersymmetric contributions to Z' decays", CERN, Novembre 2012.

"Bottom fragmentation in top decays and impact on the top mass reconstruction", Università di Barcellona, Spagna, Dicembre 2013.

"Theoretical uncertainties in the top-mass determination", SISSA, Trieste, Settembre 2014.

"Theoretical uncertainties in the determination of the top-quark mass", Università di Milano, Aprile 2015.

"Interpretation of the top mass measurements", Università di Manchester, UK, Novembre 2015.

"The top-quark mass: interpretation of the measurements and theoretical uncertainties", Università di Torino, Febbraio 2016.

"Parton showers and resummations for bottom-quark fragmentation in top decays", Università di Vienna, Austria, Aprile 2016.

"The top-quark mass: interpretation of the measurements and theoretical uncertainties", Università di Roma Tor Vergata, Febbraio 2017.

"Non-standard heavy vectors at the LHC", Università di Münster, Germania, Ottobre 2017.

Presentazioni per la Collaborazione D0

"Matrix Element Corrections to Parton Showers", DØ Collaboration Meeting, plenary talk, Fermilab, Aprile 2000. All'incontro ha partecipato anche la Collaborazione CDF.

"Cards in HERWIG", riunione del "Monte Carlo event generator working group", Fermilab, Novembre 2000.

Presentazioni per la Collaborazione CDF

"The New HERWIG Monte Carlo Event Generator", riunione del "Supersymmetry working group", Fermilab, Agosto 2001.

"HERWIG Progress Report", riunione del "QCD working group", Fermilab, Agosto 2001.

"Frammentazione di Quark Bottom in Eventi di Quark Top", riunione di CDF-Italia, Trento, Marzo 2004.

Presentazioni per la Collaborazione CMS

"Bottom Fragmentation in Higgs and Top Decay", CMS Week, CERN, Novembre 2004.

"Theoretical issues on b-quark fragmentation in top-quark decays", CERN, Aprile 2013.

Presentazioni per la Collaborazione ATLAS

"Prospects for Top Physics at the LHC", ATLAS Italia, Bologna, Gennaio 2014.

"Searching for supersymmetry in Z' decays", ATLAS SUSY working group, CERN, Maggio 2015.

"The top-quark mass: uncertainties due to b-quark fragmentation", ATLAS Tunathon Top Workshop, Università di Manchester, Dicembre 2017.

"The top-quark mass: exploring the hadronization uncertainties", ATLAS Top Quark Working Group, CERN, Febbraio 2018.

Attività didattica e supervisione di studenti e dottorandi di ricerca

Ho tenuto un corso di Cromodinamica Quantistica perturbativa in occasione del "Max-Planck-Institut Young Scientists Workshop on Hot Topics in Particle and Astroparticle Physics 2003", Ringberg Castle, Germania, Luglio 2003. Le lezioni sono state seguite da studenti e dottorandi di ricerca del Max-Planck-Institut für Physik, della Ludwig-Maximilian-Universität e della Technische Universität di Monaco di Baviera.

Ho tenuto il corso "Monte Carlo tools for the LHC" alla "Italo-Hellenic School of Physics 2005. The Physics of LHC: theoretical tools and experimental challenges", Martignano (Lecce), 9-14 Giugno 2005.

Ho tenuto il corso "Selected topics in QCD" presso la UNAM di Città del Messico, in Marzo 2006, durante la mia permanenza in Messico per il progetto HELEN. Il corso è stato seguito da studenti, dottorandi di ricerca e ricercatori della UNAM e del CINVESTAV di Città del Messico.

Sono stato "Discussion Leader" alla "2006 European School of High Energy Physics", Aronsborg, Svezia, 18 giugno - 1 luglio 2006, organizzata dal CERN di Ginevra e dal JINR di Dubna, Russia.

Ho tenuto il corso "Fisica dei generatori Monte Carlo a LHC" agli allievi del dottorato di ricerca dell'Università di Roma Tor Vergata, Aprile 2008.

Ho tenuto lezioni di Cromodinamica Quantistica per il corso di perfezionamento in fisica presso la Scuola Normale Superiore di Pisa, Marzo 2010.

Assieme alla Prof. Lynne H. Orr, sono stato supervisore dell'attività di di due dottorandi di ricerca presso l'Università di Rochester, NY, U. S. A.: Elinor K. Irish, che ha conseguito il Ph.D. nel 2006, e Alexander D. Mitov, che ha conseguito il Ph.D. nel 2003, ed è ora Postdoctoral Fellow a SUNY, Stony Brook, NY, U. S. A. Il lavoro con gli allievi di dottorato è stato pubblicato e presentato in varie conferenze.

In particolare, il lavoro con E.K. Irish è stato svolto come parte del lavoro del gruppo di fisica del quark top nel corso dell' American Linear Collider workshop e pubblicato negli articoli [14,16] della lista di pubblicazioni.

L'attività di supervisione di A.D. Mitov si è svolta nel settore della fenomenologia e frammentazione di quark pesanti. Il lavoro prodotto è stato pubblicato in [18,20,21,24], oltre ad essere contenuto nella sua tesi di dottorato di ricerca "Applications of perturbative QCD to processes with heavy quarks", hep-ph/0311101.

Assieme al Dott. Ugo Aglietti, ho collaborato alla supervisione di Giancarlo Ferrera, che ha conseguito il dottorato di ricerca in fisica presso l'Università 'La Sapienza' di Roma nel gennaio 2007 ed è attualmente ricercatore presso l'Università di Milano.

Ho seguendo, assieme al Prof. Riccardo Barbieri, Antonio Enrique Cárcamo Hernández, perfezionando presso la Scuola Normale Superiore di Pisa. Il lavoro di tesi riguarda modelli senza bosoni di Higgs e i possibili segnali, dovuti alla presenza di vettori pesanti V, ai futuri esperimenti a LHC. I risultati discussi nella pubblicazione [53] sono parte della tesi di perfezionamento.

Sono stato correlatore di Filippo Sala (relatore Prof. Alessandro Strumia), studente presso la Scuola Normale Superiore e l'Università di Pisa, laureatosi a Settembre 2010 con

la tesi di laurea specialistica in Fisica dal titolo 'Radiative Corrections to Dark Matter Indirect Signals'.

Ho seguito Francesca Pelusi, Summer Student ai LNF per un progetto sulla ricerca di Axion-Like Particles (ALPS) all'esperimento PADME.

Attività di commissario

Sono stato commissario delle discussioni delle seguenti tesi di perfezionamento in fisica presso la Scuola Normale Superiore di Pisa: Guido Cossu, 'Deconfinement transition in QCD at finite temperature', relatore Prof. A. D Giacomo; Brando Bellazzini, 'The Higgs Boson from Extended Symmetries', relatore Prof. R. Barbieri.

Sono stato commissario della discussione della tesi di laurea specialistica in fisica di Marco Farina, presso la Scuola Normale Superiore di Pisa, relatore Prof. R. Barbieri. La tesi ha avuto come oggetto le verifiche di precisione del Modello Standard delle interazioni elettrodeboli.

Premi e riconoscimenti

Ho ricevuto il premio 'Bruno Pontecorvo' presso l'International School of Subnuclear Physics, Erice, Settembre 2009.

Partecipazione all'esperimento ATLAS

A partire da Novembre 2017 sono ACE (Analysis Consultant and Expert) per la collaborazione ATLAS a LHC, con particolare riguardo all'analisi sulla misura della massa del top utilizzando muoni soffici.

Frascati, 21.07.2018 Gennaro Corcella

ATTIVITÀ DI COORDINAMENTO

Organizzazione di conferenze, workshop e scuole avanzate

Sono stato convener della sessione "Heavy Flavours" della conferenza DIS 2005, XIII International Workshop on Deep Inelastic Scattering, Madison, WI, U. S. A., 27 Aprile - 1 Maggio 2005.

Sono stato convener del gruppo di lavoro 'QCD e Fisica del Top' dell'iniziativa italiana per la fisica dell'International Linear Collider. Il primo incontro "ILC in Florence" si è tenuto presso l'Istituto Galileo Galilei di Firenze, 12–14 Settembre 2007; il secondo "Workshop LC08: e^+e^- Physics at the TeV Scale" presso i Laboratori Nazionali di Frascati il 22–25 Settembre 2008; il terzo meeting "LC09 - e^+e^- Physics at the TeV Scale and the Dark Matter Connection" a Perugia il 21–24 settembre 2009; il quarto meeting "LC11 workshop - understanding QCD at linear colliders in searching for old and new physics" e "LC13 Exploring QCD from the infrared regime to heavy flavour scales at B-factories, the LHC and a Linear Collider" presso l'ECT* di Villazzano (TN).

Sono stato membro del comitato organizzatore delle edizioni "LC13: exploring QCD from the infrared regime to heavy-flavour scales at B-factories, LHC and Linear Collider" e "LFC15: physics prospects for Linear and other Future Colliders after the discovery of the Higgs", che hanno avuto luogo presso l'ECT* di Villazzano (TN), rispettivamente a settembre 2013 e settembre 2015.

Sono stato chairman di 'LFC17: Old and New Strong Interactions from LHC to Future Colliders', settembre 2017, ECT*, Trento, Italy. Parimenti, sarò il chairman della prossima edizione LFC19, ECT*, 9-13 Settembre 2019.

Ho collaborato ad organizzare la sessione di Fisica del Quark Top per il V Workshop Italiano sulla Fisica pp a LHC, Perugia, Gennaio 2008, e la sessione di Modello Standard e Nuova Fisica per gli Incontri di Fisica delle Alte Energie, Bologna, Marzo 2008.

Sono stato convener teorico della sessione "Heavy Flavours in Deep Inelastic Scattering and Hadron Colliders" al 18th International Workshop On Deep Inelastic Scattering And Related Subjects (DIS 10), Firenze, Aprile 2010.

Sono stato convener teorico del gruppo di lavoro "Open heavy flavour" al workshop "Quarkonium 2010 - Three Days of Quarkonium Production in pp and pA collisions", presso l'École Polytechnique a Palaiseau, Francia, Luglio 2010.

Presso i Laboratori Nazionali di Frascati ho organizzato vari Spring, Summer, Autumn and Winter Institutes tra il 2012 e il 2018 su vari temi di fisica dei collider: QCD, Higgs, generatori Monte Carlo, supersimmetria e fisica oltre il modello standard.

Presso i Laboratori Nazionali di Frascati, sono stato membro del comitato organizzatore della Spring School "Bruno Touschek", (Maggio 2012, 2014 e 2016), dei Joint Workshop "Rethinking Naturalness" (Dicembre 2014), "The top mass: challenges in definition and determination" (Maggio 2015), "Challenges in the Dark Sector: Alternatives to the WIMP paradigm" (Dicembre 2015), "Selected Puzzles in Particle Physics" (Dicembre 2016), "Hot QCD Matters" (Maggio 2017), "Weird Ideas in Theoretical Physics (Thinking outside the box)" (Dicembre 2017).

Sono stato tra gli organizzatori degli Incontri di Fisica Nucleare 2016, LNF, Novembre 2016.

Sono stato chairman dell'edizione 2018 della Spring School "Bruno Touschek", LNF,

Maggio 2018.

Sono membro del comitato organizzatore di Photon 2019, International Conference on the Structure and Interactions of the Photon, LNF, Frascati, 3-7 giugno 2019.

Da luglio 2018 e sino a giugno 2020: chairman del comitato organizzatore dei seminari generali presso i Laboratori Nazionali di Frascati.

Attività di editore e revisore di riviste scientifiche

Sono Review Editor di Frontiers in High-Energy and Astroparticle Physics.

Sono editore dei volumi: "LC10 - New Physics: complementarities between direct and indirect searches", Nuovo Cimento, Vol. 34 C, n.5, suppl.1 (2011); "LC11 Workshop: understanding QCD at linear colliders in searching for old and new physics", Frascati Phys.Ser. 54 (2012) pp.1-392; "LC13 - Exploring QCD from the infrared regime to heavy flavour scales at B-factories, the LHC and a Linear Collider", Nuovo Cimento, Vol. 37 C, anno 37, serie 3, n. 2 (2014); "LFC15: Physics prospects for Linear and other Future Colliders after the discovery of the Higgs", Frascati Phys.Ser. 61 (2016) pp.1-227; "LFC17: Old and New Strong Interactions from LHC to Future Colliders", in corso di pubblicazione in Frascati Physics Series.

Sono editore dei proceedings della Spring School 'Bruno Touschek' 2018, in corso di pubblicazione in Frascati Physics Series.

Sono revisore per le riviste Physics Letters B, Physical Review D, Physical Review Letters, JHEP, Canadian Journal of Physics e Il Nuovo Cimento.

Incarichi in commissioni INFN

Dal 2015 coordinatore locale, presso i Laboratori Nazionali di Frascati, delle iniziative specifiche PHENOLNF e quindi ENP (Exploring New Physics) della Commissione IV dell'INFN.

Attività di revisore per progetti di ricerca internazionali

Sono revisore di progetti di ricerca internazionali per conto della fondazione belga Fonds Wetenschappelijk Onderzoek (FWO), della svizzera Swiss National Foundation (SNF) e della Iran National Science Foundation (INSF).

Frascati, 21.07.2018 Gennaro Corcella

ATTIVITÀ DI TERZA MISSIONE

Lezione su 'Il Modello Standard delle particelle elementari' per il Liceo Classico 'Cagnazzi' di Altamura (BA) in visita presso i LNF in relazione al programma PON (Programma Operativo Nazionale), Ottobre 2012.

Partecipazione al comitato scientifico per la redazione dell'opuscolo divulgativo 'LNF - Accelerando il Futuro', terminato di stampare a maggio 2018.

Presentazione del film 'Il senso della bellezza' durante l'Open Day dei LNF, maggio 2018.

Membro del comitato organizzatore degli Incontri di Fisica 2018, che si svolgeranno-presso INFN-LNF il 10-12 ottobre 2018. Proposta di gruppo di lavoro su simulazioni Monte Carlo ed analisi dati nel corso degli incontri.

Dal 1997 al 2006, redattore del mensile di politica internazionale 'Guerre & Pace', con particolare attenzione al ruolo della scienza nei processi di pace e guerra ed a temi ambientali.

Volontario per l'Open Day in occasione del cinquantesimo anniversario del CERN di Ginevra, Ottobre 2004.

Segretario del club 'ConCERNed for Humanity' presso il CERN, avente lo scopo di approfondire temi riguardanti ambiente, energia, armamenti, pace e guerra da un punto di vista scientifico, dal 2003 al 2005.

Frascati, 21.07.2018 Gennaro Corcella

Gennaro Corcella

PUBBLICAZIONI

[1] P. Colangelo, G. Corcella and G. Nardulli, "$\Upsilon(4S) \to B^0\bar{B}^0\gamma$ Background at B Factories", Phys. Rev. D54 (1996) 1212.

[2] P. Colangelo and G. Corcella, "Investigations on CPT Invariance at B-Factories", Eur. Phys. J. C1 (1998) 515.

[3] G. Corcella and M.H. Seymour, "Matrix Element Corrections to Parton Shower Simulations of Heavy Quark Decay", Phys. Lett. B442 (1998) 417.

[4] G. Corcella and M.H. Seymour, "Initial State Radiation in Simulations of Vector Boson Production at Hadron Colliders", Nucl. Phys. B565 (2000) 227.

[5] G. Corcella and M.H. Seymour, "Simulations of Top Production and Decay at the Linear Collider", in "2nd ECFA/DESY Study 1998-2001", pp. 265-270.

[6] G. Corcella, "On the Top Mass Reconstruction Using Leptons", J. Phys. G26 (2000) 634.

[7] G. Corcella and M.H. Seymour, "Vector Boson Transverse Momentum Distributions at the Tevatron", hep-ph/9911536, J. Phys. G26 (2000) 643.

[8] M. Beneke, G. Corcella et al., "Top Quark Physics", hep-ph/0003033, in Proceedings of the Workshop on Standard Model Physics (and more) at the LHC, edited by G. Altarelli and M.L. Mangano, pp.419-529.

[9] G. Corcella, M.L. Mangano and M.H. Seymour, "Jet Activity in $t\bar{t}$ Events and Top Mass Reconstruction at Hadron Colliders", JHEP 0007 (2000) 004.

[10] S. Catani, G. Corcella et al., "QCD", hep-ph/0005025, in Proceedings of the Workshop on Standard Model Physics (and more) at the LHC, edited by G. Altarelli and M.L. Mangano, pp. 1-115.

[11] G. Corcella, "Vector Boson Production at Hadron Colliders: Results From HERWIG and Resummed Calculations", in "Rochester 2000. Theoretical High Energy Physics" Proceedings of MRST Meeting, edited by C.R. Hagen, pp. 190-201.

[12] G. Corcella, "Top Mass Measurement and Bottom Fragmentation at the LHC", in Proceedings of DPF 2000 Meeting, Int. J. Mod. Phys. A 16S1A (2001) 372.

[13] G. Corcella, E.K. Irish and M.H. Seymour, "HERWIG for Top Physics at the Linear Collider", in "Batavia 2000, Physics and Experiments with Future Linear e^+e^- Colliders", pp. 356-359.

[14] G. Corcella, I.G. Knowles, G. Marchesini, S. Moretti, K. Odagiri, P. Richardson, M.H. Seymour and B.R. Webber, "HERWIG 6: an Event Generator for Hadron Emission Reactions with Interfering Gluons (Including Supersymmetric Processes)", hep-ph/0011363, JHEP 0101 (2001) 010.

[15] T. Abe, G. Corcella et al., "Linear Collider Physics Resource Book for Snowmass 2001. Chapter 6: Top Quark Physics", hep-ex/0106057.

[16] G. Corcella and A.D. Mitov, "Bottom Quark Fragmentation in Top Quark Decay", Nucl. Phys. B 623 (2002) 247.

[17] G. Corcella and A.D. Mitov, "Top Decay and Bottom Fragmentation in NLO QCD", in Proceedings of 37th Rencontres de Moriond on QCD and Hadronic Interactions.

[18] M. Cacciari, G. Corcella and A.D. Mitov, "Soft-Gluon Resummation for Bottom Fragmentation in Top Quark Decay", JHEP 0212 (2002) 015.

[19] G. Corcella and A.H. Hoang, "Uncertainties in the $\overline{\mathrm{MS}}$ Bottom Quark Mass from Relativistic Sum Rules", Phys. Lett. B 554 (2003) 133.

[20] G. Corcella and A.D. Mitov, "Soft-Gluon Resummation for Heavy Quark Production in Charged-Current Deep Inelastic Scattering", Nucl. Phys. B 676 (2004) 346.

[21] G. Corcella and A.H. Hoang, Bottom quark mass determination from low-n sum rules Nucl. Phys. B (Proc. Suppl.) 133 (2004) 186.

[22] G. Corcella and S. Moretti, "Matrix-Element Corrections to Parton Shower Simulations for Higgs Hadroproduction", Phys. Lett. B590 (2004) 249.

[23] G. Corcella and S. Moretti, "Matrix-Element Corrections to $gg/q\bar{q} \to H$ in HERWIG", in "The QCD/SM Working Group: Summary Report", Proceedings of 3rd Les Houches Workshop, Physics at TeV Colliders, Les Houches, France, 26 May - 6 June 2003.

[24] G. Corcella, "Fragmentation of Bottom Quarks in Top Quark Decay", hep-ph/0409120, in Proceedings of Incontri sulla Fisica delle Alte Energie, Torino, Italia, 14-16 Aprile 2004.

[25] G. Corcella, "On the Determination of the Bottom Quark Mass from Relativistic Sum Rules", in Proceedings of Incontri sulla Fisica delle Alte Energie, Torino, April 14-16 2004, pag. 313-316.

[26] G. Corcella, "Fragmentation in $H \to b\bar{b}$ Processes", Nucl. Phys. B 705 (2005) 363.

[27] G. Corcella, "Progress in Bottom-Quark Fragmentation", hep-ph/0502019, in Proceedings of 18th International Workshop on High-Energy Physics and Quantum Field Theory (QFTHEP 2004), St. Petersburg, Russia.

[28] G. Corcella and L. Magnea, "Soft-gluon resummation effects on parton distributions", Phys. Rev. D72 (2005) 074017.

[29] G. Corcella and L. Magnea, "Impact of large-x resummation on parton distribution functions", hep-ph/0507042, in Proceedings of DIS 05, Madison, WI, U. S. A. AIP Conf. Proc. 792 (2005) 303.

[30] G. Corcella, "Heavy flavours: theory summary", hep-ph/0507043, in Proceedings of DIS 05, Madison, WI, U. S. A., AIP Conf. Proc. 792 (2005) 179.

[31] G. Corcella and V. Drollinger, "Bottom-quark fragmentation: comparing results from tuned event generators and resummed calculations", Nucl. Phys. B730 (2005) 82.

[32] A. Banfi, G. Corcella, M. Dasgupta, Y. Delenda and G.P. Salam, "Resummation", in "HERA and the LHC - A workshop on the implications of HERA for LHC physics", Editors A. De Roeck and H. Jung, Geneva 2005, Part III - Working Group 2: Multi-Jet Final States and Energy Flows, Parton Density Function, pag. 274-187.

[33] G. Altarelli, J. Andersen, R.D. Ball, M. Ciafaloni, D. Colferai, G. Corcella, S. Forte, L. Magnea, A. Sabio Vera, G.P. Salam and A. Staśto, "Resummation", in "HERA and the LHC - A workshop on the implications of HERA for LHC physics", Editors A. De Roeck and H. Jung, Geneva 2005, Part II - Working Group 1: Parton Density Functions, pag. 160-180.

[34] G. Corcella and V. Drollinger, "B-Hadron Production in Top Quark Decay", in Proceedings of TOP 2006, Coimbra, Portugal, PoS TOP2006 (2006) 035.

[35] C. Buttar, G. Corcella et al., "Les Houches Physics at TeV Colliders 2005, Standard Model and Higgs working group: Summary report.", hep-ph/0604120.

[36] U. Aglietti, G. Corcella and G. Ferrera, "Modelling non-perturbative corrections to bottom-quark fragmentation", Nucl. Phys. B775 (2007) 162.

[37] A. Banfi, G. Corcella and M. Dasgupta, "Angular ordering and parton showers for non-global QCD observables", JHEP 0703 (2007) 050.

[38] G. Corcella and G. Ferrera, " Charm-quark fragmentation with an effective coupling constant", JHEP 0712 (2007) 050.

[39] S. Albino, G. Corcella et al., "Parton fragmentation in the vacuum and in the medium", arXiv:0804.2021 [hep-ph], Proceedings of the workshop on "Parton fragmentation in the vacuum and in the medium" ECT*, Trento.

[40] B.S. Acharya, F. Cavallari, G. Corcella, R. Di Sipio and G. Petrucciani, "Monte Carlo generators for top quark physics at the LHC", Nuovo Cim.123B (2008) 415.

[41] B.S. Acharya, F. Cavallari, G. Corcella, R. Di Sipio and G. Petrucciani, "Commissioning ATLAS and CMS with top quarks", Nuovo Cim. 123B (2008) 409.

[42] B.S. Acharya, F. Cavallari, G. Corcella, R. Di Sipio and G. Petrucciani, Nuovo Cim. 123B (2008) 403.

[43] A. Castro and G. Corcella, "Standard Model and New Physics: theoretical and experimental perspectives", Nuovo Cim. 123B (2008) 749.

[44] G. Corcella and D. Rebuzzi, "Phenomenology of the Standard Model Higgs Boson at the LHC", in Proceedings of the Workshop on Monte Carlo's, Physics and Simulations at the LHC, arXiv:0902.0180 [hep-ph], pp. 121-128.

[45] G. Corcella, 'Bottom-quark fragmentation: resummations and Monte Carlo simulations', arXiv:0902.180 [hep-ph], in Proceedings of the Workshop on Monte Carlo's, Physics and Simulations at the LHC, pp. 103-111.

[46] Z.A. Ajaltouni, G. Corcella et al., "Proceedings of the workshop: HERA and the LHC workshop series on the implications of HERA for LHC physics", Eds. H. Jung and A. De Roeck, arXiv:0903.3861 [hep-ph].

[47] G. Corcella and F. Mescia, "A phenomenological study of bottom quark fragmentation in top quark decay", Eur. Phys. J. C65 (2010) 171.

[48] N. Armesto, G. Corcella, L. Cunqueiro and C.A. Salgado, "Angular-ordered parton showers with medium-modified splitting functions", JHEP 1109 (2009) 122.

[49] R. Barbieri, A. E. Càrcamo Hernàndez, G. Corcella, R. Torre and E. Trincherini, "Composite vectors at the Large Hadron Collider", JHEP 1003 (2010) 068.

[50] G. Corcella and K. Lipka, "Heavy Flavours in DIS and Hadron Colliders: Working Group Summary", PoS (DIS2010) (2010) 016.

[51] G. Corcella, "Parton showers with medium-modified splitting functions", PoS (DIS2010) (2010) 102.

[52] G. Corcella, "Theoretical issues on the top mass reconstruction at hadron colliders", Nuovo Cimento C033 (2010) 4, 81-88.

[53] Heavy flavour production at the LHC: Theoretical aspects. Z. Conesa del Valle, G. Corcella et al., "Quarkonium production in high energy proton-proton and proton-nucleus collisions", Nucl. Phys. Proc. Suppl. 214 (2011) 3.

[54] M. Cirelli, G. Corcella, A. Hektorm, G. Hutsi, M. Kadastik, P. Panci, M. Raidal, F. Sala and A. Strumia "PPPC 4 DM ID: A Poor Particle Physicist Cookbook for Dark Matter Indirect Detection", JCAP 1103 (2011) 051.

[55] Z. Conesa del Valle, G. Corcella, F. Fleuret, E.G. Ferreiro, V. Kartvelishvili, B. Kopeliovich, J.P. Lansberg, C. Lourenco, G. Martinez, V. Papadimitriou. H. Satz, E. Scomparin, T. Ullrich, O. Teryaev, R. Vogt and J.X. Wang, 'Quarkonium production in high energy proton-proton and proton-nucleus collisions ', Nucl. Phys. Proc. Suppl. 214 (2011) 3.

[56] G. Corcella, 'Z' Bosons at the LHC in a Modified MSSM', arXiv:1206.3062, Proceedings di DIS2012, Bonn, March 2012, DESY-PROC-2012-02/316.

[57] G. Corcella, 'Supersymmetry in Z' decays', arXiv:1207.5424, Proceedings di Rencontres de Blois 2012, Blois, May 2012.

[58] F. Borzumati, D. Comelli, G. Corcella, S. De Curtis, S. Moretti, G. Pancheri and O. Panella, Proceedings, LC11 Workshop on Understanding QCD at linear colliders in searching for old and new physics, ECT*, Trento, 2011, Frascati Phys.Ser. 54 (2012) pp.1-392.

[59] G.Corcella, 'Searching for supersymmetry in Z' decays', EPJ Web Conf. 60 (2013) 18011.

[60] G. Corcella and S. Gentile, 'Heavy Neutral Gauge Bosons at the LHC in an Extended MSSM', Nucl. Phys. B866 (2013) 293.

[61] G. Corcella, "Hadronization systematics and top mass reconstruction", EPJ Web Conf. 80 (2014) 00019.

[61] G. Corcella, "Phenomenology of supersymmetric Z' decays at the Large Hadron Collider", Eur. Phys. J. C75 (2015) 264.

[62] G. Corcella, S. Forte et al, "The Standard Model from LHC to future colliders", Eur. Phys. J. C75 (2015) 554.

[63] G. Corcella, A. Andreazza et al, " What Next: White Paper of the INFN-CSN1", Frascati Phys. Ser. 60 (2015) 1.

[64] G. Corcella, "Supersymmetric Z' decays at the LHC", PoS (PLANCK2015) (2015) 027.

[65] G. Corcella, "Interpretation of the top-quark mass measurements: a theory overview", PoS (TOP2015) (2016) 037.

[66] G. Corcella, "Challenges in heavy-quark fragmentation", in Proceedings, Parton Radiation and Fragmentation from LHC to FCC-ee, CERN, November 2016.

[67] G. Corcella, S. De Curtis, S. Moretti and G. Pancheri, "Physics Prospects for Linear and other Future Colliders after the Discovery of the Higgs (LFC15)", Frascati Phys.Ser. 61 (2016) pp.1-227.

[68] P. Azzi, G. Corcella et al, "Physics Behind Precision", Proceedings of FCC-*ee* miniworkshop 'Physics beyond precision', arXiv:1703.01626.

[69] G. Corcella, C. Corianò, A. Costantini and P. Frampton, "Bilepton Signatures at the LHC", Phys. Lett. B773 (2017) 544.

[70] J.Y. Araz, G. Corcella, M. Frank and B. Fuks, "Loopholes in Z' searches at the LHC: exploring supersymmetric and leptophobic scenarios", JHEP02 (2018) 092.

[71] G. Corcella, "Interpretation of the top-quark mass results", PoS DIS2017 (2018) 134.

[72] G. Corcella, "Supersymmetric signals in Z decays", PoS DIS2017 (2018) 280.

[73] G. Corcella, R. Franceschini and D. Kim, "Fragmentation Uncertainties in Hadronic Observables for Top-Quark Mass Measurements", Nucl. Phys. B929 (2018) 485.

[74] G. Corcella, "Top-quark mass determination at the LHC: a theory overview", PoS(EPS-HEP2017) (2017) 437.

[75] G. Corcella, "Non-standard heavy vectors at the LHC", PoS(EPS-HEP2017) (2017) 268.

[76] G. Corcella, C. Corianò, A. Costantini and P. Frampton, "Exploring scalar and vector bileptons at the LHC in a 331 model". arXiv:1806.04536 [hep-ph], sottoposto per la pubblicazione a Phys. Lett. B.

Frascati, 21.07.2018 Gennaro Corcella

Curriculum Vitae

Marco Nardecchia

Personal Information and Contact Details

Place of birth	Velletri (Italy)
Date of birth	January 19, 1983
Work address	Department of Physics, Sapienza University of Rome Piazzale Aldo Moro 2, 00185 Roma, Italy
Phone	+39 0649914613
Email	m.nardecchia@uniroma1.it

Professional Positions

03/2019 - present **Associate Professor**
Department of Physics, Sapienza University of Rome

12/2017 - 02/2019 **INFN Researcher**
INFN Section of Trieste

10/2016 - 02/2019 **Research Fellow**
Theoretical Physics Department, CERN

10/2013 - 09/2016 **Research Associate**
Department of Applied Mathematics and Theoretical Physics (DAMTP),
University of Cambridge

10/2010 - 09/2013 **Research Associate**
CP^3-Origins Centre, University of Southern Denmark

Education

09/2010 **Ph.D. in High Energy Physics** at the International School for Advanced Studies (SISSA), Trieste.
Thesis Title: *Phenomenological Aspects of Supersymmetry Breaking.*
Supervisor: Prof A. Romanino.

09/2006 **Master of Science in Physics** at the University of Rome "Sapienza".
Thesis Title: *Chargino Contribution to Flavor and CP violation in the Minimal Supersymmetric Standard Model.*
Supervisors: Prof G. Martinelli and Dr L. Silvestrini.
Grade: 110/110 *cum laude.*

01/2005 **Bachelor of Science in Physics** at the University of Rome "Sapienza".
Thesis Title: *Mechanism of Spontaneous Symmetry Breaking in the Spherical Limit.*
Supervisors: Prof A. Crisanti and Prof P. Tartaglia.
Grade: 110/110 *cum laude.*

Fellowships awarded

10/2014 - 09/2016	**King's College Research Associate**, Cambridge
06/2006	**INFN Fellowship** for bachelor students
08-09/2005	**Summer Student Fellowship**, at Fermilab (US) with the CDF experiment.

Research interests

Theory and phenomenology of fundamental interactions. In particular:

- Physics beyond the Standard Model of elementary particles
- Physics of flavour and CP violation
- Astroparticle Physics (Dark Matter and Baryogenesis)

Summary of Scientific Activity and its Impact

- Bibliometric data according to Inspire (at 17/09/2019): 50 papers, 2239 citations, h-index 26.
- About 70 talks at conferences, universities, and other scientific institutions
- Organizer of 3 Scientific Workshops and 1 Theory Institute at CERN.

Teaching Activity

PhD Schools:

- Lecturer of Particle Physics Phenomenology, Nordita Winter School 2019, Stockholm (Sweden)
- Discussion Leader, 2017 CERN-JINR European School of High-Energy Physics, Evora (Portugal)

At the University of Rome Sapienza:

- "Weak Interactions in the Standard Model and Beyond", Academic year 2019-2020
- Supervisor of two master students: Alessio Mastroddi and Lukas Allwicher

At the University of Cambridge:

- Student supervisor for the course "Principles of Quantum Mechanics", Michaelmas Term 2013, 2014 and 2015
- Class supervisor for the course "Gauge Field Theory", Lent Term 2014, 2015 and 2016
- Class supervisor for the course "Supersymmetry and Extra Dimensions", Lent Term 2015
- Co-supervisor of a PhD student, Dr Sophie Renner
- Supervisor of summer projects for undergraduates: "Higgs Boson Machine Learning Challenge" , Mr. Jay Jadav, King's College London (Summer 2014)

At the University of Southern Denmark:

- Leading training sessions on "Discovering SUSY" for PhD and master students during the "Mass 2011 LHC Training School" (May 9-13, 2011)
- Teaching assistant for the course "Quantum Field Theory I" (2013)
- Teaching assistant for the course "Quantum Field Theory II" (2013)

At the University of Trieste:

- Supervisor of first-year students at the Physics Department (Academic years 2008/2009 and 2009/2010)

Referee Activity

- External Referee for the PhD Thesis of Marzia Bordone (University of Zurich) and Alessandro Davoli (Sissa, Trieste)
- Referee for major scientific journal in high energy physics: Physics Review Letters (PRL), Physics Letters B (PLB), Physical Review D (PRD), European Physical Journal C (EPJC), Journal of High Energy Physics (JHEP)

Fundings and Workshops

- Participant of PRIN 2017 "Le conseguenze del sapore"
- INFN Grant for young researchers (20k EUR)
- Workshop, "Instant workshop on B-Physics anomalies", 17-19 May 2017, (15k CHF funded by CERN)
- Workshop and CERN Theory Insitute, "From flavour anomalies to direct discoveries of New Physics", 22 October - 2 November 2018, (40k CHF funded by CERN)
- Mainz Institute Theoretical Physics (MITP) topical workshop, "Belle II opportunities for model builders", 28 January - 1 February 2019 (funded by MITP)

Other Professional Activities

At CERN:

- Since November 2017: official CERN guide
- Since March 2017: convener of the Collider Cross Talk
- Since October 2016: organiser of the Beyond Standard Model Forum

At the University of Cambridge:

- October 2013 - September 2016: organiser of the joint DAMTP-Cavendish seminars

At the University of Southern Denmark:

- July 2011 - September 2012: organiser of the Lecture series and Seminars at the CP^3-Origins Center

At the International School for Advanced Studies (SISSA):

- Academic years 2008/2009 and 2009/2010: students' representative of the High Energy sector and member of the School Council
- Academic years 2008/2009 and 2009/2010: organiser of the Journal Club of the High Energy sector