Curriculum Vitae of Paolo Nason

Name: Paolo Nason

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Born in Milan (Italy), on March 18th 1952.

University: From the academic year 1972/73 to 1976/77: Istituto di fisica dell' Università degli Studi di Milano. Degree earned: "Laurea in fisica", in April 1977.

Doctoral studies: From October 1978 to December 1981, University of California, San Diego. From January 1982 to summer 1984, Stanford University.

Doctoral degree: Ph. D. in Physics, Stanford University, 27/09/1984.

Postdoctoral positions: From September 1984 to August 1986: "postdoctoral research scientist" at the Columbia University, New York. From September 1986 to December 1987, "Postdoctoral research scientist" at the Brookhaven National Laboratory, Upton, New York. From January 1988 to August 1989 "Research Scientist" at the Eidg. Tech. Hochschule, Zurich, Switzerland

Visiting positions: From September 1989 to August 1990, Research Associate at CERN, Geneve, Switzerland. From July 2011 to Augusts 2012, research associate at CERN, on leave of absence from INFN.

Fixed term staff at CERN: From November 1992 to November 1998, Staff Member at the CERN theory division, 3+3 years contract, on leave of absence from INFN.

INFN Career: From September 1990 to November 1991, INFN research staff, (art. 36), Gruppo collegato di Parma, sezione di Milano. From November 1991, INFN **research staff** (permanent position), initial research position. From November 1993, **"primo ricercatore"** INFN, II professional level. From April 1998, **"Dirigente di Ricerca"** INFN, first professional (top) level.

Administrative duties

National coordinator of an INFN research unit. During the past 15 years I have been the national coordinator of the the INFN "Iniziativa Specifica" PR21, involving **30 researchers**. The INFN "Iniziativa Specifica" is a research unit comprising several INFN research groups (in Italy) that work on similar research topic. The national coordinator **supervises the financing** for travel and equipment costs for the unit, and the **assignment of postdoctoral positions** to the unit.

Coordinator of the Theory group at the INFN Milano Bicocca Section. Since October 2012 I have been nominated coordinator of the TH INFN unit at the INFN Section of Milano Bicocca. The coordinator is in charge of handling the **INFN funding of the theory group** at Milano Bicocca, which involves **23 researchers**.

Teaching activity. I have taught several courses for undergraduate students, graduate students and young researcher. The most relevant ones are the following.

- Since the academic year 2003-2004 until 2010-2011, 60 hours undergraduate course entitled "Theory and phenomenology of fundamental interactions", at the University of Milano-Bicocca.
- 30 hours course entitled "Theory and phenomenology of fundamental interactions" for the doctoral school at the University of Milano, from the academic year 1992/93 to 2002/2003.
- Academic year 2000-2001, "Theory and phenomenology of fundamental interactions", corso di Laurea in Fisica, IV anno, 40 hours, Università di Milano-Bicocca.

- "Perturbative QCD", 6 hours lectures, 1997 European School of High-Energy Physics - CERN - JINR School of Physics , 25 May - 7 Jun 1997 , Menstrup, Denmark.
- Five hours lectures entitled "Perturbative QCD" at the CERN ACADEMIC TRAINING PROGRAMME, CERN, Geneve, from 25/10/93 to 1/11/93
- Six hours lectures entitled "Perturbative QCD", at the "JINR-CERN school of physics", Alushta, Crimea, USSR, 5-18 Maggio 1991.

Main Scientific achievements. The framework of my research work is mostly on strong interactions in high energy collisions. As is well known, strong interaction always represent a challenge to our ability to make predictions in high energy collisions, for the several reasons. First of all, the strong coupling constant is typically the largest one in the Standard Model. It is often needed to go beyond the leading perturbative order, and, at times, to resum kinematically enhanced contributions in order to have a reasonable assessment of cross sections and distributions. As a further point, the low energy (long distance) regime of QCD is not calculable. It is necessary to separate the short distance and long distance regime of QCD, where the former can be computed in a sound way, and the latter must rely upon modeling, in order to give an exclusive description of strong interaction final states in high energy collisions.

Today we have reliable methods to compute cross sections for high energy processes. The great success of the LHC physics program relies heavily upon these methods. Higgs production itself, and the determination of the Higgs couplings in the Standard Model relies upon calculations of strong processes, that involve perturbative calculations to the level of two-loop accuracy, resummation of all order contributions enhanced in the partonic threshold region, and simulation of the full events carried out by combining perturbative calculations, Shower Monte Carlo algorithms and models of the long distance physics leading to the formation of hadrons.

I list below few topics in my scientific career where I have obtained groundbreaking results that had considerable subsequent development in this framework.

Heavy flavour production cross section. The calculation of the heavy flavour production cross section at next-to-leading order (NLO) [135, 128] was considered, at the time when we published it, an extremely challenging calculation. It was also a timely result. The first observations of open Bottom production in hadronic collisions at the $Sp\bar{p}S$ collider were being reported at that time, and the search for top required accurate calculations of its production cross section. My leading role in this work was recognize by my coauthors, that decided to put my name as the first author of the paper (in our field, the authors are usually ordered alphabetically). The relevant papers has received more than 1000 citations, according to the SPIRES citation database, due to their relevance to top, bottom and charm production measurements at colliders. Even today, this calculation is of basic relevance for top pair production at the LHC [17], where it has been validated by several measurements.

Besides its importance for current phenomenology, this work also demonstrated that it was possible to compute next-to-leading order corrections also for very complex processes. As a rule of thumb, leading order computations of collider cross sections only yield the order of magnitude of the cross section, and NLO corrections are needed in order to give an estimate of the cross sections with errors of few tens of percent. Nowadays (more than 20 years after the calculations of ref. [135, 128]), the field of NLO calculations has developed to such an extent that NLO corrections can be computed using automatic techniques also for processes of high complexity.

Production of high transverse momentum heavy flavoured hadrons. The kinematics of Bottom production at LEP was particularly interesting in the 90's, due to the fact that a number of key LEP observables were strongly dependent upon them. From a QCD point of view, the study of bottom production kinematics involves dealing with the resummation of perturbative corrections that are potentially enhanced by powers of logarithms of the annihilation energy over the bottom mass. I conceived a method to correctly resum these enhanced contributions at the leading and subleading level in QCD [119]. I extended this method, that became later known as FONLL, to

hadronic reactions [70]. Among its most interesting application, I quote the solution of the long-standing discrepancy in the measurement of bottom production cross section at the TEVATRON [52]. A recent application to LHC physics is given in ref. [12].

Resummation of soft gluons and power corrections. In the framework of perturbative QCD calculations of hadron collider processes, resummation of soft gluon effects can lead to improved predictions. These calculation, however, turned out to be highly non-trivial. Issues related to the growth of the coefficients of the perturbative expansion can lead to false conclusions with regard to the real impact of the resummation.

In ref. [80] we constructed method for the resummation of such effects [80], that became known as "Minimal Prescription", and that is still a reference method in this framework [49, 17]. Previous method had severe problems, since they generated spurious power suppressed effects that yielded wrong cross section estimates, in particular yielding to large enhancements of the top production cross section at the Tevatron.

NLO improvement of Shower Monte Carlo algorithms. For the past 10 years, I have been working on topics related to Shower Monte Carlo generators (SMC's from now on). SMC's are tools that compute the detailed structure of a high energy event leading to hadron production. They have become, since their first appearance at the beginning of the 1980's, an indispensable tool for planning and performing data analysis in high energy collisions leading to strongly interacting final states. In fact, the complexity of hadronic events is such that simulation of the detailed structure of the events is needed to model the detector response and to estimate acceptances. QCD tests, on the other hand, were preferably carried out making only a minimal use of SMC's, and relying mostly upon fixed order QCD calculations. In fact, in order to test the predictivity of perturbative QCD, it was preferred to rely upon predictions that had simple expressions in terms of the QCD strong coupling constant and parton densities, and it was preferred to avoid the "modeling" aspects of the SMC's, that could have biased our interpretation of the outcome of the tests.

At the time when LEP was closed (end of 2000), thanks to the large body of QCD tests carried out at LEP, HERA and at the Tevatron, there was quite clear evidence that perturbative QCD was correctly describing high energy collisions. Thus, the emphasis of the theoretical research in QCD shifted from the "testing" framework to the problem of reliably predicting high energy processes. A considerable effort went into the direction of improving the accuracy of SMC's generator, in particular by using all the experience accumulated in NLO calculation in order to extend the accuracy of SMC's to the NLO level, i.e. in order to achieve NLO+PS (that stands for NLO+Parton Shower) generators. Webber and Frixione first conceived a method for improving SMC's to the NLO level. This method had the drawback of requiring the generation of events with negative weights.

My contribution to this field is summarized as follows. In [41] I presented a method for improving SMC's to the NLO level, that, among other advantages over previous methods, overcame the negative weight problem. A "proofs of concepts" was given first in the production of pairs of electroweak bosons [37], immediately followed by the construction of a generator for top pair production. In ref. [32], the method introduced in [41], dubbed POWHEG (for Positive Weights Hardest Emission Generator) was formulated in its full generality, allowing in principle the implementation of any process in an NLO+PS framework. In ref. [23], we presented a computer framework for the implementation of NLO+PS generators, dubbed the POWHEG BOX, to be used by authors of NLO calculations willing to use their result in an NLO+PS framework. These works had a considerable impact, that can easily be seen by looking at their citation record: ref. [41] has more than 500 citations, ref. [32] has more than 700 citations, and ref. [23] has more than 300 citation. In particular, the Higgs production generator [26] has become the generator of choice for the simulation of Higgs production at the LHC. More than 30 LHC processes have been implemented in an NLO+PS framework by several authors using the POWHEG BOX (see `http://powhegbox.mib.infn.it`).

Very recent developments [9, 11] have allowed to extend the accuracy of the method up the next-to-next-to-leading order, at least, at the moment, for very simple processes, like gluon fusion Higgs

production, leading to the introduction of a first NNLO+PS generator for Higgs production in gluon fusion in ref. [5]

Publication List of Paolo Nason

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Proc. of the Workshop "Heavy Quarks at Fixed Target", Frascati, May 31^{st} - June 2^{nd} 1993, in Frascati 1993, "Heavy Quark at Fixed Target" 81-97.

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[110] "A theoretical study of the c and b fragmentation function" in e^+e^- annihilation, G. Colangelo e P. Nason, UPRF-92-324 e LNF 91-017, Marzo 1992, *Phys. Lett.* **285B**(1992)167.

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[114] "Cross sections for top production", P. Nason, proceedings of the International Lepton-Photon Symposium and Europhysics Conference on High Energy Physics, Editors S. Hegarty, K. Potter and E. Quercigh, World Scientific Publishing Co., July 1991.

[115] "New theoretical results in heavy quark hadroproduction", P. Nason, M. Mangano and G. Ridolfi, proceedings of the Heavy Flavour Conference of San Miniato, June 1991, San Miniato (Italy).

[116] "Theoretical developements in the theory of heavy quark production", P. Nason, Proceedings of "Les Rencontres de Physique de la Vallée d'Aoste", La Thuile, Val d'Aosta, 1991, edited by M. Greco, Editions Frontières.

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[127] "QCD at LEP", Z. Kunszt and P. Nason (conveners), and G. Marchesini and B. R. Webber, CERN 89-08, vol. 1, 21 Settembre 1989, edited by G. Altarelli, R. Kleiss and C. Verzagnassi. Apparso anche su Print-89-0836 (Zürich), Presented at NATO adv. Research Workshop, Brighton, England, 9-14 Luglio 1989, e ETH preprint ETH-PT/89-39, Agosto 1989.

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[134] "Total cross section for heavy flavour production in hadronic collisions and QCD", G. Altarelli, M. Diemoz, G. Martinelli, P. Nason,
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CURRICULUM VITAE

EDUCATION

1982 : Ph.D. in Physics, University of Geneva, Switzerland.
1978 : *Laurea* in Physics (Magna Cum Laude), Universita degli Studi, Naples, Italy.

APPOINTMENTS

2001 - : Professor, Columbia University.
2003 - 2009 : Co-Director, Columbia Astrophysics Laboratory.
1996 - 2000 : Associate Professor (with tenure), Columbia University.
1991 - 1995 : Associate Professor (without tenure), Columbia University.
1986 - 1990 : Assistant Professor, Columbia University.
1983 - 1985 : Post-Doctoral Fellow, Harvard University.
1979 - 1982 : Graduate Research Assistant, University of Geneva.
1978 - 1979 : Post-Graduate Fellow, Istituto Nazionale di Fisica Nucleare (INFN), Italy.

HONORS AND AWARDS

2012 : Weizmann Institute of Science, Rosi and Max Varon Visiting Professorship.
2005 : Ufficiale, Repubblica Italiana.
2001 - : Fellow, American Physical Society.
1991 : National Science Foundation Career Award.
1990 : Japan Society for the Promotion of Science, Fellowship Award.
1977 : CERN Graduate Student Research Fellowship Award.

EXPERIMENTS AND COLLABORATIONS

2002 - : Spokesperson of the XENON Dark Matter Collaboration.
1996 - 2001: Spokesperson of the LXeGRIT Compton Telescope Collaboration.

PROFESSIONAL MEMBERSHIP AND SERVICE

Societies and Working Groups Membership:

American Physical Society (since 1985).

American Astronomical Society (since 1986).

Institute of Electrical and Electronic Engineering (since 1986).

NASA Small Attached Payloads Working Group (1987 - 1990).

SPIE Working Group on Penetrating Radiation (1993 - 1997).

NASA Gamma-Ray Astronomy Working Group Panel (Since 1996).

NSF DUSEL Dark Matter Working Group (2006 - 2010).

Committee Memberships:

National Academies Astronomy and Astrophysics Subcommittee (1990).

NASA Small Explorer Review Panel (1993).

Executive Committee of the APS Division of Astrophysics (2001 - 2004).

DoE annual review of High Energy Physics at Fermilab (2005).

ASPERA Program Review Committee (2008 - 2010).

National Academies Astronomy and Astrophysics 2010 Program Prioritization Panel on Particle Astrophysics and Gravitation (2009-2010).

CNRS IN2P3 Scientific Committee (since 2009).

CANFRANC Underground Laboratory Scientific Committee (since 2009).

Organizer and Co-Organizer of:

"Conference on Liquid Noble Gas Detectors and their Applications" Stockholm, Sweden, Aug. 21 - 23, 1991.

"International Conference on Liquid Radiation Detectors", Tokyo, Japan, April 7 - 10, 1992.

"SPIE Instrumentation Conference on Gamma-Ray Detectors", San Diego, CA (1992 and1994).

Short Course on "Detectors for X-ray and Gamma-Ray Astrophysics", IEEE Nuclear Science Symposium (2000).

Editor and Reviewer of:

Reviewer for *Physical Review*, *Physics Letters*, *Astrophysical Journal*, *Nuclear Physics*, *Nuclear Instruments and Methods* and *IEEE Transactions on Nuclear Science*, *Journal of Instrumentation*.

Editor for the *Elsevier Astroparticle Physics Journal*, Editor for the *Journal of Instrumentation*.

Reviewer for NASA, NSF and DOE research proposal.

ADVISING AND MENTORSHIP

Ph.D. Thesis Students:

Chen Chiaming (M.A. in Applied Physics, 1987), Jun Park (Ph.D. in Physics, 1988), Stephen Salchow (M.A. in Physics, 1988), Reshmi Mukherjee (Ph.D. in Physics, 1993), Danli Chen (Ph.D. in Physics, 1994), Ping Chen (Ph.D. Summer Research 1995), Kaya Mori (Ph.D. Summer Research, 1997), Burair Kothari (Ph.D. Summer Research, 1998), Tomotake Kozu (M.A. in Physics, 1998), Fang Xu (Ph.D. in Physics, 1998), Joseph Formaggio (Ph.D. Summer Student, 1999), Alessandro Curioni (Ph.D. in Physics, 2004), Kaixuan Ni (Ph.D. in Physics, 2006), Guillaume Plante (Ph.D. in Physics, 2011), Bin Choi (Ph.D. in Physics, 2012), Kyungeun Lim (Ph.D. in Physics, 2012), Luke Goetze(Ph.D. in Physics, expected 2014), Hugo Contreras (Ph.D. in Physics, expected 2015).

Postdocs (current affiliation)**:**

Masayo Suzuki (Riken, Japan), Alexey Bolotuikov (BNL, USA), Shu Zang (IHEP, China), Alessandro Curioni (ETH, Switzerland), Uwe Oberlack (Mainz University, Germany), Masaki Yamashita (University of Tokyo, Japan), Pawel Majweski (RAL, England), Kaixuan Ni (STJU, China), Rafael Lang (Purdue, USA), Antonio Melgarejo (Columbia University, USA), Ranny Budnick (Columbia University, USA), Alfio Rizzo (Columbia University, USA), Guillaume Plante (Columbia University, USA).

SERVICE TO THE UNIVERSITY AND DEPARTMENT

Columbia College Academic Advisor.

Graduate School of Arts and Sciences Executive Committee.

Columbia College Rabi Scholars Admission Committee.

Columbia University Senate Member.

Columbia University Honors & Prizes Committee.

Columbia University Commission on the Status of Women Committee.

Columbia University Radiation Safety Committee.

Columbia Astrophysics Laboratory Co-Director.

Physics Department Undergraduate Committee.

Physics Department Graduate Exam Committee.

Physics Department Ph.D. Examining Committee.

Physics Department Colloquium Committee.

Physics Department Nuclear/Particle Seminar Committee.

Physics Department Student/Faculty Issues Committee.

GRANTS AWARDED AS PRINCIPAL INVESTIGATOR

National Science Foundation - Division of Physics

"The XENON1T Dark Matter Project: A Project Proposal from US Institutions of the XENON Collaboration"

2012 - 2016 NSF PHY-1209979 $7,412,136

"Collaborative Proposal: Continuation of the XENON Dark Matter Project: Construction and Underground Operation of an Upgraded XENON100 Detector"

2009 - 2012 NSF PHY-0904220 $2,423,847

"MRI Instrument Development for Liquid Xenon Dark Matter Searches: An Atom Trap Trace Analysis System to Measure Ultra-Low Krypton Contamination in Xenon"

2009 - 2013 NSF PHY-0923274 $1,100,000

"Collaborative Proposal: The XENON Dark Matter Project: Construction and Underground Operation of a 100 kg Detector"

2008 - 2010 NSF PHY-0705337 $3,780,323

"Collaborative Proposal: MAX Multi-Ion Argon and Xenon TPCs"

2009 - 2012 Princeton U. 00001733 (NSF PHY-0919363) $519,344

"The XENON Dark Matter Project: Construction of the 1st 100 kg Module"

2004 - 2007 NSF PHY-04-00596 $4,267,585

"XENON: A Liquid Xenon Experiment For Dark Matter"

2002 - 2004 NSF PHY-02-01740 $992,000

NASA - High Energy Astrophysics Division

"A Study of Liquid Xenon Detectors with Enhanced Spectroscopy and Time-of-Flight Background Rejection for an Advanced Compton Telescope Liquid Xe Detectors: Enhanced Spectroscopy and ToF"

2005 - 2009 $415,000

"Advanced Compton Telescope"

(Subcontract fromU.C. Berkeley)

2004 - 2009 UCB SA4432-24322 $61,176

"Development of Xenon Time Projection Chambers for Precise Compton Imaging of Astrophysical Nuclear Lines"

2000 - 2004 NAG5-5280 $1,374,584

"LXeGRIT: A Liquid Xenon Gamma-Ray Imaging Telescope for High-Energy Astrophysics"

1997 - 1999 NAG5-5108 $1,221,000

"Gamma-Ray Observations of the Orion Cloud Region with EGRET"

1995 - 1997 NAG 5-2872 $6,906

"A High-Resolution Liquid Xenon Imaging Telescope for 0.1-10 MeV γ-ray Astrophysics: Construction and Initial Balloon Flight"

1993 - 1996 NAGW-2013 $1,100,000

"Development of a High Resolution Liquid Xenon Imaging Telescope for Medium Energy γ-ray Astrophysics"

1991 - 1992 NAGW-2013 $440,000

"Development of a High Resolution Imaging Chamber for γ-ray Astronomy"

1988 - 1990 NAGW-1370 $202,000

National Science Foundation (Career Award)

"Development of a Liquid Xenon TPC for ββ Decay

1991 PHY-91-09937 $60,000

DARPA/ONR

"Development of Liquid Xenon Imaging γ-ray Spectrophotometers"

1986 - 1989 N00014-86-C-0086 $563,000

AT&T Foundation

"Liquid Xenon Detector Development"

1988 $10,000

Department of Energy

"CsI-Photocathode Readout for Liquid Xenon and Krypton Calorimetry

1993 DE-FG02-93 ER 40699 $53,000

PATENTS

1993 E. Aprile and D. Chen, "A Vacuum UV Light Source Based on Rare Gas Scintillation Amplification Sustained by Photon Positive Feedback" (Columbia Office of Science and Technology Development Patent number 08/089,666).

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Curriculum Vitae

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Personal

Birthplace/Birthdate: Cleveland, OH; October 26, 1961
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Education

1988	PhD, Physics, Yale University, New Haven, CT, USA.
1982	BSc, First Class Honors, Physics, University of Sussex, Brighton, UK.
1979	European Baccalaureate, European School, Varese, Italy.

Professional Appointments

2014-	Vice-Chair, Physics Department, University of California, Santa Barbara.
2002-	Professor, Physics Department, University of California, Santa Barbara.
1997-02	Associate Professor, Physics Department, Univ. of California, Santa Barbara.
1994-97	Assistant Professor, Physics Department, University of California, Santa Barbara.
1991-94	Wilson Fellow (Associate Scientist), Fermi National Accelerator Laboratory.
1988-91	Postdoctoral Fellow, Enrico Fermi Institute, University of Chicago.

Awards/Fellowships

1996	Alfred P. Sloan Research Fellow.
1995	US Department of Energy, Outstanding Junior Investigator.
1983	E. Tappan Stannard Fellowship, Yale University.
1982	J.W. Gibbs Fellowship, Yale University.

Experimental Collaboration Service

2010-	Publication's Board, CMS Experiment (CERN).
2010- 13	Management Board, LHC Physics Analysis Center (FNAL).
2010-11	Physics Project Office, CMS Experiment (CERN).
2010-11	Co-Leader, Physics Dataset Working Group, CMS Experiment (CERN).
2008-09	Co-Convenor, Top Physics Analysis Group, CMS Experiment (CERN).
2004-07	Advisory Committee, LHC Physics Analysis Center (FNAL).
2003	Spokesperson Selection Committee, BaBar Experiment (SLAC).
2001	Spokesperson Selection Committee, BaBar Experiment (SLAC).
2000-03	Publication's Board, BaBar Experiment (SLAC).
2000-03	Technical Board, BaBar Experiment (SLAC).

2000-03	Co-System Manager, Silicon Vertex Tracker, BaBar Experiment (SLAC).
1999	Co-Leader, Silicon Vertex Tracker Commissioning, BaBar Experiment (SLAC).
1991-94	Co-System Manager, Front-end and Trigger Upgrade, CDF Experiment (FNAL).
1991-93	Co-Convenor, Top Physics Analysis Group, CDF Experiment (FNAL).
1991	Co-Convenor, Lepton+Jets Analysis Group, CDF Experiment (FNAL).
1989	Co-Convenor, Electroweak Physics Working Group, Tevatron Upgrade Workshop, CDF Experiment (FNAL).

Other Professional Service (outside UC Santa Barbara)

2013-	Reviewer of Research Proposal, European Research Council.
2011-	Comitato Tecnico Scientifico, INFN (Italy).
2013	Lawrence Berkeley National Laboratory Site Visit Review Panel, US Department of Energy.
2012	Referee for Initiative on Evaluation of Research Projects, Ministry of Education, Universities, and Research (Italy).
2011	Physics Undergraduate Program Review Panel, University of California, San Diego.
2011	Reviewer of Research Proposals, Royal Society, UK.
2009	Outstanding Junior Investigator Selection Panel, US Department of Energy.
2009-12	Graduate Student COLA Award Committee, US National Science Foundation.
2008	University of Chicago Site Visit Review Panel, US National Science Foundation.
2007	Lawrence Berkeley National Laboratory Site Visit Review Panel, US Department of Energy.
2005-07	Particle Physics Project Prioritization Panel (P5), US Department of Energy and National Science Foundation.
2005	University of Michigan Site Visit Review Panel, US Department of Energy.
2004	"Lehman" Review Committee of BTeV Project, US Department of Energy.
2002	Director's Review Committee, CDF and D0 Upgrade Projects (FNAL).
1998-	Reviewer of Research Proposals, US Department of Energy and National Science Foundation.
1997	Co-organizer and Editor of Proceedings, Heavy Flavor Conference.

Selected Recent Talks

2014	Searches for top squarks at CMS, Seminar, Texas A&M University, College Station, TX.
2013	Dark Matter Searches at the LHC, AAAS annual meeting, Boston, MA.
2012	Susy Physics at CMS, Plenary Talk, SUSY12 Conference, Beijing, China.
2012	New Physics Searches with Dileptons, Seminar, Fermilab.
2012	Searching for the Higgs, Physics Department Colloquium, UCSB.
2011	Leptonic SUSY Searches at CMS, Seminar, Galileo Galilei Institute, Firenze, Italy.
2010	Highlights from CMS, Seminar, Kavli Institute of Theoretical Physics, UCSB.
2010	Top Physics at the LHC, Plenary Talk, Aspen Winter Conference, Aspen, CO.
2010	Early EWK/Top Measurements at the LHC, Seminar, University of Rome "La Sapienza", Italy.

2009	Physics at the LHC, Physics Department Colloquium, UCSB.
2008	Top Physics at CMS, Seminar, Laboratorio de Instrumentacao a Fisica Experimental de Particulas, Lisbon, Portugal.
2007	Physics at the LHC, Three Lectures at the Theoretical Advanced Study Institute in Elementary Particle Physics (TASI), Boulder, CO.

Selected Publications

CMS Collaboration: Measurement of top quark-antiquark pair production in association with a W or Z boson in pp collisions at sqrt(s) = 8 TeV; Eur. Phys. J. C74 (2014) 3060.

CMS Collaboration: Measurements of the t t-bar charge asymmetry using the dilepton decay channel in pp collisions at sqrt(s) = 7 TeV; JHEP 04 (2014) 191.

CMS Collaboration: Measurement of Higgs boson production and properties in the WW decay channel with leptonic final states; JHEP 01 (2014) 055.

CMS Collaboration: Search for new physics in events with same-sign dileptons and jets in pp collisions at sqrt(s)=8 TeV; JHEP 01 (2014) 163.

CMS Collaboration: Measurements of t t-bar spin correlations and top-quark polarization using dilepton final states in pp collisions at 7 TeV; Phys. Rev. Lett. 112 182001 (2014).

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CMS Collaboration: Search for new physics in events with opposite-sign leptons, jets, and missing transverse energy in pp collisions at sqrt(s) = 7 TeV; Phys. Lett. B 718, 815 (2013).

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C. Campagnari and M. Franklin, The discovery of the top quark; Rev. Mod. Phys. 69 137 (1997).

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CDF Collaboration: Measurement of σ ($W \rightarrow e\ \nu$) and σ ($Z \rightarrow ee$) in p-pbar collisions at root-S=1800 GeV; Phys. Rev. D44 29 (1991).

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C. Campagnari et al, A search for the decay $K^+ \rightarrow \pi^+ \mu^+ e^-$; Phys. Rev. Lett. 61 2062 (1988).

N.J. Baker et al, Search for short lived neutral particle emitted in K^+ decay; Phys. Rev. Lett. 59 2832 (1987).

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Marzio Nessi Curriculum Vitae

Born in Locarno (Switzerland). Swiss citizen

1973 – 1976	Liceo Collegio Papio Ascona, "Maturità Federale".
1976 – 1981	Physics studies at **ETH-Zürich** (Swiss Federal Institute of Technology). Master's degree in Physics (Dipl. Physicist ETH)
1981 – 1985	Research Assistant at the High Energy Institute of **ETH-Zürich**. Teaching of undergraduate physics courses. Experiments at the Gesellschaft für Schwerionenforschung **(GSI)** in Darmstadt and at Lawrence Berkeley Laboratories **(LBL)** in Berkeley. Ph.D. Thesis (ETH-Ph.D. Thesis N. 7826).
1985	Post-doctoral activity at **ETH-Zürich** on accelerator mass spectrometry and LASER-induced accelerators
1985 – 1988	Research Associate, **Rice University**, Houston (USA) active at **FERMILAB**, **Brookhaven National Laboratory** and at **CERN**: **FNAL–E581**: construction and commissioning of polarized proton and antiproton beams at 200 GeV **FNAL–E704**: physics exp. with polarized protons and antiprotons **BNL–E817**: polarization effects in hyperon and meson production **BNL–E810**: study of hyperon production in heavy ion collisions. **CERN–NA47**: design of a muon polarimeter
1988 – 1989	Senior Research Associate, Rice University
1989 – 1992	**CERN** research fellow, working on **UA2** and **LHC**
since 1992	**CERN** staff in the PH Department. CERN appointments during this period (chronological order):

- **Co-Spokesperson RD34**
- **Section Leader CERN PH ATA/TL**
- **Group Leader CERN PH ATA**
- **Member of the CERN senior staff**
- **Technical Coordinator of the ATLAS experiment (1999-2013)**
- **Member of the ATLAS top management and all LHC related steering committees (1999-2013)**
- **Member of the CERN very senior staff**
- **Project Leader of the CERN neutrino program (2012-)**
- **Leader of the Development & Innovation unit in the CERN DG Department (2013-)**
- **Member of Neutrino Short and Long Baseline steering committees at FNAL (2014-)**
- **Co-founder of the ATTRACT initiative**

since 2009	**Titular Professor** at the Geneva University
since 2013	**Chair** of the review process of the ESS facility and project
since 2014	**Director** of the JINST Journal

Prof. Dr. Alberica Toia

Full Professor
Institut für Kernphysik,
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date of birth: 10/08/1977
nationality: italian

Education

- **Giessen University, Germany**
  PhD in Physics (April 2004): *"Performance of the HADES Spectrometer for Dilepton Identification in the Reaction C+C at 1-2 AGeV"* (Supervisors: Prof. Dr. Wolfgang Kuehn)
  (final grade: "1 magna cum laude" / "very good")
- **Milano University, Italy**
  Master in Physics (February 2001): *"Dilepton production in heavy ion collision - The time of flight wall at the HADES detector"* (Supervisors: Prof. Dr. Ileana Iori and Prof. Dr. Pierfrancesco Bortignon)
  (final grade: "104/110" / "very good")
- **Niels Bohr Institute, Copenhagen, Denmark**
  Bachelor Diploma (May 1999): "*Studies of the Sigma Baryon - Strange Baryon Production in Hadronic Decays of the Z Boson"* (Supervisor: Prof. Dr. Peter Hansen)
  (final grade: "11/13" / "very good")

Employment Records

- **From 01/10/2013 to present**
  Full Professor at Institut für Kerne Physik, Goethe University Frankfurt am Main, Germany
  joint appointment with GSI Helmholtzzentrum für Schwerionenforschung GmbH
  - ALICE: Centrality, Multiplicity, Nuclear-modification factors
  - CBM: Development of First Level Event Selector, triggering and physics performance studies

- **From 01/06/2012 to 30/09/2013**
  Marie-Curie fellow with INFN Padova, Italy
  - Convener of ALICE p-A task force (run preparation, data taking, early analyses)
  - Dielectron measurements
  - Open-heavy flavor measurements
  - Convener of Global Event Characterization: Centrality and Event Plane measurement in Pb+Pb and p+Pb, software framework development and maintenance
  - Centrality Trigger preparation and monitoring during data taking

- **From 01/09/2011 to 31/05/2012**
  Post-doc at Frankfurt Institute for Advanced Studies (FIAS), Germany
  Project Associate at CERN, Switzerland
  - ALICE High Level Trigger: verification, validation, online monitoring during data taking and quality assurance
  - Global Event Characterization (Centrality and Event Plane) measurement in Pb+Pb and software framework development
  - Centrality Trigger preparation and monitoring during data taking

- **From 01/09/2008 to 31/08/2011**
  Research Fellow at CERN, Switzerland
  - Bulk Properties of Pb+Pb collisions (mid/forward multiplicity, transverse energy, Glauber model,)
  - Centrality measurement in Pb+Pb and software framework development
  - Event Plane measurement in Pb+Pb and software framework development
  - Measurement of nuclear modification factors in the first heavy ion data
  - Analysis of Lambda and K0s in p+p and Pb+Pb data

- **From 15/11/2004 to 31/08/2008**
  Post doctoral research fellow at Stony Brook University, New York, NY
  - Measurement of dielectron continuum and its resonances in p+p and Au+Au collisions
  - Measurement of direct photons via internal conversion in p+p and Au+Au collisions
  - Measurement of charm and beauty cross-section
  - Modeling of neutral meson and scaling properties of hadron production in p+p collisions
  - Production and studies of CsI coated photocathode for a Hadron Blind detector
  - Advisor for graduate students (Torsten Dahms, Haijiang Gong, Sarah Campbell)

- **From 01/04/2004 to 31/08/2004**
  Research Employee at the II Physics Institute of the University of Giessen
  - Study of the HADES second level trigger performance
  - Dilepton analysis of C+C reaction at 1-2 AGeV

- **From 01/04/2001 to 31/03/2004**
  Doctoral Research Assistant at the II Physics Institute of the University of Giessen
  (Scholarship in the International Graduate School *"Complex System of Hadrons and Nuclei"*, Giessen-Copenhagen-Helsinki-Jyvaskyla.
  - Study of the HADES second level trigger performance
  - Software development for the HADES second level trigger from the raw level to high analysis level
  - Integration of the Second level trigger algorithm in the PID code
  - Dilepton analysis of C+C reaction at 1-2 AGeV
  - Research periods at Copenhagen University: acceptance studies for the BRAHMS experiment

- **From 01/09/2000 to 31/03/2001**
  Master student in the HADES experiment
  - Time of flight detector installation, calibration, first test and data analysis.

- **May 1999**
  Research activities at the HASYLAB of DESY in Hamburg (X-Ray Physics, synchrotron radiation)

- **Form 01/09/1998 to 30/06/1999**
  ERASMUS-SOCRATES scholarship at the Niels Bohr Institute of Copenhagen University

- **From 01/09/1995 to 08/01/2001**
  Physics undergraduate at the Mathematical, Physical, and Natural Sciences Faculty at University of Milano

Awards, Professional Memberships and Services

- First Position in Brookhaven Lab's Top 5 Scientific Discoveries of 2010 for the measurement of the temperature of the Quark Gluon Plasma (see publication list)
  This is also "Highest man-made temperature" in the Guinness World Records
  (http://www.guinnessworldrecords.com/world-records/10000/highest-man-made-temperature)
- Member of University committee:
  - Professur Prof. Dr. H. Podlech
  - Apl.-Professur Dr. V. Krozer
- Member of Editorial Board of CBM-FLES Technical Design Report
- Convener of ALICE p-A task-force (2012-2013)
- Convener of ALICE Physics Working Group on Event Characterization (2011-present)
- Convener of PHENIX Physics Working Group on Light Vector Meson (2008-2010)
- Referee for:
  Physics Review Letters
  Physics Letters B
  European Physical Journal A
  European Physical Journal C
  Nuclear Physics A
- Organizer of CERN Workshop "pA @ LHC" (2012)
- Organizer of HLT Workshop (2012)
- Organizer of Workshop "Electromagnetic Probes: Photons and Dileptons" of RHIC-AGS Users Meeting (2008)
- Member and chair of various Paper Committee for ALICE
- Member and chair of various Internal Review Committee for ALICE
- Member and chair of various Paper Preparation Group Committee for PHENIX
- Member and chair of various Internal Review Committee for PHENIX
- Organizer of the weekly Nuclear Physics Seminar at Stony Brook (2006-2008)
- Student Representative in the International Graduate School *"Complex System of Hadrons and Nuclei"*, Giessen-Copenhagen-Helsinki-Jyvaskyla. (2001-2004)
- Young Member Representative in the HADES Collaboration Board (2002-2004)
- American Physical Society member
- Deutsche Physikalische Gesellschaft member

Teaching

- **Fall 2014, Frankfurt:** Kerne und Teichen 3 (nuclear forces and models)
- **Spring 2007, Stony Brook:** recitation instructor of Physics 122 (electromagnetism, optics)
- **Fall 2006, Stony Brook:** recitation instructor of Physics 121 (mechanics, thermodynamics, waves)

- **Spring 2006, Stony Brook**: recitation instructor of Physics 122 (electromagnetism, optics)
- **Spring 2004, Giessen**: laboratory instructor of Physics 1 (mechanics, thermodynamics, waves) and Physics 3 (modern physics: atomic, nuclear, solid state)
- **Fall 2003, Giessen**: laboratory instructor of Physics 2 (electromagnetism, optics)
- **Spring 2003, Giessen**: laboratory instructor of Physics 1 and 3
- **Fall 2002, Giessen**: laboratory instructor of Physics 2
- **Spring 2002, Giessen**: laboratory instructor of Physics 1
- **Fall 2001, Giessen**: laboratory instructor of Physics 2
- **Spring 2001, Giessen**: laboratory instructor of Physics 1 and 3

Languages

- Italian: native speaker
- English: fluent written and spoken, regular use
- German: good written and spoken, 5 years of learning experience and living in Germany
- French: good spoken, basic knowledge written, 5 years of living in Geneve
- Spanish: basic knowledge
- Danish: basic knowledge, 1 year of learning experience and living in Denmark

References

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Publications

The list of publications is organized as follows: the first group contains the papers where I am the primary (or among the primary) author of the analysis or the paper; the second group contains the ALICE publications, the third group contains the PHENIX publications, the last group contains the HADES publications.
According to this list, a Hirsch-index of 53 has been calculated.

1. A. Adare et al., *Detailed measurement of the e+e− pair continuum in p + p and Au + Au collisions at sqrt(s_NN)=200 GeV and implications for direct photon production,* Phys. Rev. C 81, 034911 (2010). cited 159 times.
2. A. Adare et al., *Enhanced production of direct photons in Au + Au collisions at sqrt(s_NN)**(1/2) = 200-GeV*, Phys. Rev. Lett. 104, 132301 (2010) cited 244 times

For the latter two articles a VIEWPOINT* has been published
Charles Gale, Department of Physics, McGill University, Montréal, QC H3A 2T8, Canada
Taking the temperature of extreme matter, Published March 29, 2010
http://physics.aps.org/articles/v3/28
This research was awarded with the first position in Brookhaven Lab's Top 5 Scientific Discoveries of 2010

3. K. Aamodt et al, *Charged-particle multiplicity density at mid-rapidity in Pb-Pb collisions at sqrt(sNN)=2.76 TeV*, Phys.Rev.Lett 105:252301 (2010). cited 216 times.
4. K. Aamodt et al., *Elliptic flow of charged particles in Pb-Pb collisions at 2.76 TeV*, arXiv:1011.3914v1, Phys.Rev.Lett.105:252302, 2010. Cited 339 times.

For this article a VIEWPOINT has been published
Edvard Shuryak, Department of Physics and Astronomy, Stony Brook University, Stony Brook, NY 11794, USA *A "Little Bang" arrives at the LHC,* Published December 13, 2010
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5. B. Abelev et al., *Performance of the ALICE Experiment at the CERN LHC*, Int.J.Mod.Phys. A29 (2014) 1430044
6. A. Toia, *Centrality Dependence of particle production in p-A collisions measured by ALICE*, arXiv:1410.0481 (2014).
7. A. Toia, *ALICE Measurements in p-Pb Collisions: Charged Particle Multiplicity, Centrality Determination and implications for Binary Scaling*, Nucl.Phys. A926 (2014) 78-84
8. B. Abelev et al., *Multiplicity dependence of the average transverse momentum in pp, p-Pb, and Pb-Pb collisions at the LHC*, arXiv:1307.1094
9. B. Abelev et al., *Transverse Momentum Distribution and Nuclear Modification Factor of Charged Particles in p-Pb Collisions at sqrt(sNN)=5.02 TeV*, Phys.Rev.Lett. 110 082302 (2013).
10. B. Abelev et al., *Pseudorapidity density of charged particles p-Pb collisions at sqrt(sNN)=5.02 TeV*, Phys.Rev.Lett. 110 032301 (2013).
11. B. Abelev et al., *Centrality determination of Pb-Pb collisions at sqrt(sNN) = 2.76 TeV with ALICE*, Phys.Rev. C88 044909 (2013).
12. K. Aamodt et al, *Centrality dependence of the charged-particle multiplicity density at mid-rapidity in Pb-Pb collisions at sqrt(sNN)=2.76 TeV*, Phys.Rev.Lett 106:230301 (2011). cited 240 times.
    K. Aamodt et al., *Suppression of charged particles production at large transverse momentum in central Pb-Pb collisions at sqrt(sNN) = 2.76 TeV,* Phys. Lett. B 696 30–39 (2011). cited 289 times
13. A.Toia, *Bulk Properties of Pb-Pb collisions at sqrt(sNN) = 2.76 TeV measured by ALICE*, J.Phys.G: 38:124007 (2011). cited 41 times
14. A. Adare et al, *Observation of direct-photon collective flow in sqrt(sNN)=200GeV Au+Au collisions*, Phys.Rev.Lett. 109 (2012) 122302 (2011). Cited 61 times
15. A. Toia, *Enhanced dilepton radiation at RHIC,* Prog.Part.Nucl.Phys.62:492-497, 2009.

16. A. Toia, *e+e- pairs: a clock and a thermometer of relativistic heavy ion collision*, J.Phys.G 35:104037, 2008. cited 15 times
17. A. Toia, *Measurements of dilepton continuum at the PHENIX experiment at RHIC*, PoS CPOD07: 03, 2007.
18. A. Adare et al., *Measurement of neutral mesons in p+p collisions at sqrt(s)= 200 GeV and scaling properties of hadron production*, Phys. Rev. D 83, 052004 (2011). cited 47 times
19. A. Adare et al., *Charged hadron multiplicity fluctuations in Au+Au and Cu+Cu collisions from sqrt(s_NN) = 22.5 to 200 GeV*, Phys.Rev.C78:044902 (2008). cited 30 times
20. S. Afanasiev et al., *Enhancement of the dielectron continuum in s(NN) = 200 GeV Au+Au collisions*, arXiv: nucl-exp/07063034, (2007) cited 83 times
21. A. Adare et al., *Dilepton mass spectra in p+p collisions at s**(1/2) = 200-GeV and the contribution from open charm*, Physics Letters B 670, 313 (2009) cited 78 times
22. A. Adare et al., *Dihadron azimuthal correlations in Au+Au collisions at s(NN)**(1/2) = 200-GeV*, Phys.Rev.C78:014901 (2008). cited 270 times
23. A.Toia, *Measurement of low mass dielectron continuum in sqrt(s_NN) = 200 GeV Au+Au collisions with the PHENIX experiment at RHIC*, Eur.Phys.J.C49:243-247 (2007).
24. A.Toia, *Measurement of low mass dielectron continuum in s(NN) = 200 GeV Au+Au collisions with the PHENIX experiment at RHIC*, Nucl.Phys.A774:743-746, 2006. cited 22 times
25. A.Toia et al., *A Highly Selective Dilepton-Trigger System Based on Ring Recognition*, Nucl. Instr. and Meth. A 502 270 (2003).
26. A.Toia, J. Lehnert et al., *The HADES second level trigger: from the concept to the first results with C+C reactions*, Proceedings of the XLI International Winter Meeting on Nuclear Physics: Ricerca Scientifica ed Educazione Permanente Supplemento N. 120, p. 351 (2003).
27. A.Toia et al., *The HADES second level trigger algorithm: principles and first results from experiments with C beam*, Proceedings of the XL International Winter Meeting on Nuclear Physics; Ricerca Scientifica ed Educazione Permanente Supplemento N. 119, p. 112 (2002).

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28. B. Abelev et al., *Event-by-event mean pT fluctuations in pp and Pb-Pb collisions at the LHC*, Eur.Phys.J. C74 (2014) 10, 3077
29. B. Abelev et al., *Technical Design Report for the Upgrade of the ALICE Inner Tracking System*, J.Phys. G41 (2014) 087002
30. B. Abelev et al., *Exclusive J/ψ photoproduction off protons in ultra-peripheral p-Pb collisions at sqrt(sNN)=5.02 TeV*, arXiv:1406.7819
31. B. Abelev et al., *Multiplicity dependence of jet-like two-particle correlations in p-Pb collisions at sqrt(sNN)= 5.02 TeV*, arXiv:1406.5463
32. B. Abelev et al., *Production of Sigma(1385)+/- and Xi(1530)0 in proton-proton collisions at sqrt(s)= 7 TeV*, arXiv:1406.3206
33. B. Abelev et al., *Multi-particle azimuthal correlations in p-Pb and Pb-Pb collisions at the CERN Large Hadron Collider*, Phys.Rev. C90 (2014) 054901
34. B. Abelev et al., *Elliptic flow of identified hadrons in Pb-Pb collisions at sqrt(sNN) = 2.76 TeV*, arXiv:1405.4632
35. B. Abelev et al., *Suppression of Y(1S) at forward rapidity in Pb-Pb collisions at sqrt(sNN)=2.76 TeV*, Phys.Lett. B738 (2014) 361-372
36. B. Abelev et al., *Beauty production in pp collisions at sqrt(s) = 2.76 TeV measured via semi-electronic decays*, Phys.Lett. B738 (2014) 97-108
37. B. Abelev et al., *Measurement of electrons from semileptonic heavy-flavor hadron decays in pp collisions at sqrt(s) = 2.76 TeV*, arXiv:1405.4117
38. B. Abelev et al., *Suppression of psi(2S) production in p-Pb collisions at sqrt(sNN) = 5.02 TeV*, arXiv:1405.3796
39. B. Abelev et al., *Neutral pion production at midrapidity in pp and Pb-Pb collisions at sqrt(sNN) = 2.76 TeV*, Eur.Phys.J. C74 (2014) 10, 3108
40. B. Abelev et al., *Measurement of prompt D-meson production in p-Pb collisions at sqrt(sNN) = 5.02 TeV*, arXiv:1405.3452
41. B. Abelev et al., *Transverse momentum dependence of inclusive primary charged-particle production in p-Pb collisions at sqrt(sNN)=5.02 TeV*, Eur.Phys.J. C74 (2014) 3054

42. B. Abelev et al., *Azimuthal anisotropy of D meson production in Pb-Pb collisions at sqrt(sNN)=2.76 TeV*, Phys.Rev. C90 (2014) 034904
43. B. Abelev et al., *Measurement of visible cross sections in proton-lead collisions at sqrt(sNN) = 5.02 TeV in van der Meer scans with the ALICE detector*, JINST 9 (2014) 1100
44. B. Abelev et al., *Freeze-out radii extracted from three-pion cumulants in pp, p-Pb and Pb-Pb collisions at the LHC*, arXiv:1404.1194
45. B. Abelev et al., *K*(892)0 and phi(1020) production in Pb-Pb collisions at sqrt(sNN) = 2.76 TeV*, arXiv:1404.0495
46. B. Abelev et al., *Production of inclusive psi (1S) and psi (2S) in p-Pb collisions at sqrt(sNN)=5.02 TeV*, arXiv:1410.2559 (2014)
47. B. Abelev et al., Measurement of quarkonium production at forward rapidity in pp collisions at sqrt(s)=7 TeV, Eur.Phys.J. C74 (2014) 8, 2974
48. B. Abelev et al., *Production of charged pions, kaons and protons at large transverse momenta in pp and Pb-Pb collisions at sqrt(sNN) = 2.76 TeV*, arXiv:1401.1250
49. B. Abelev et al., *Measurement of charged jet suppression n Pb-Pb collisions at sqrt(sNN)=2.76 TeV*, arXiv:1311.0633
50. B. Abelev et al., *Centrality, rapidity and transverse momentum dependence of J/ψ suppression in Pb-Pb collisions at sqrt(sNN)=2.76TeV*, arXiv:1311.0214
51. B. Abelev et al., *Two and Three-Pion Quantum Statistics Correlations in Pb-Pb Collisions at sqrt(sNN)=2.76 TeV at the LHC*, arXiv:1310.7808
52. B. Abelev et al., *J/ψ production and nuclear effects in p-Pb collisions at sqrt(sNN)=5.02 TeV*, arXiv:1308.6726
53. B. Abelev et al., *Multiplicity Dependence of Pion, Kaon, Proton and Lambda Production in p--Pb Collisions at sqrt(s_NN) = 5.02 TeV*, arXiv:1307.6796
54. B. Abelev et al., *Multi-strange baryon production at mid-rapidity in Pb-Pb collisions at sqrt(sNN)= 2.76 TeV*, arXiv:1307.5543
55. B. Abelev et al., *K0S and Λ production in Pb-Pb collisions at sqrt(sNN) = 2.76 TeV*, Phys.Rev.Lett. 111 222301 (2013).
56. B. Abelev et al., *Long-range angular correlations of pi, K and p in p--Pb collisions at sqrt(s_NN) = 5.02 TeV*, Phys.Lett. B726 (2013) 164-177
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Conferences

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2. *Alice measurements in p-Pb collisions: Charged particle multiplicity, centrality determination and implications for binary scaling,* invited plenary talk at International Conference on Initial Stages in High-Energy Nuclear Collisions 2013, Illa de A Toxa, Spain, 10 September 2013.
3. *Bulk Properties of Pb-Pb collisions at $\sqrt{s_{NN}}$= 2.76 TeV measured by ALICE,* invited plenary talk at Quark Matter 2011, Annecy, 24 May 2011.

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11. *Enhancement of the dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions*, Critical Point and Onset of Deconfinement GSI, Darmstadt, 09-13 July 2007.
12. *Enhancement of the dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions*, Electromagnetic Probes of Strongly Interacting Matter: The Quest for Medium Modifications of Hadrons ECT, Trento, 18-22 June 2007.
13. *Measurement of low mass dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions with the PHENIX experiment at RHIC*, Hot Quark 2006, Villasimius, 15-20 May 2006.
14. *Measurement of low mass dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions with the PHENIX experiment at RHIC*, Second Joint Meeting of the American Physical Society and the Physical Society of Japan 2005, Maui, 18-22 Sep 2005.
15. *Measurement of low mass dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions with the PHENIX experiment at RHIC*, Quark Matter 2005, Budapest, 4-9 Aug 2005.
16. *The HADES Second Level Trigger: From the Concept to First Results with C+C experiments*, XLI International Winter Meeting on Nuclear Physics (26.1.03-2.2.03, Bormio).
17. *The Dilepton Selection of the HADES trigger*, DoktorandenTag (10.10.02, Giessen).
18. *A Highly Selective Dilepton-Trigger System Based on Ring Recognition*, IV Workshop on RICH Detectors (4.6.02-9.6.02, Pylos).
19. *Performance of the Trigger System of the HADES Detector*, DPG Tagung (11.3.02-15.3.02, Muenster Germany).
20. *The HADES second level trigger algorithm: principles and first results from experiments with C beam*, XL International Winter Meeting on Nuclear Physics (21.1.02-26.1.02, Bormio)

Workshops

21. *Centrality Measurement in p-Pb collisions with ALICE,* Workshop pA @ LHC, 5 June 2012.
22. *Measurements of p-Pb and Pb-p collisions with ALICE,* Workshop pA @ LHC, 4 June 2012.
23. *Performances of HLT Online Monitoring, HLT Workshop, Frascati, 10 February 2012.*
24. *Measuring the hottest temperature in the Universe*, EMMI Symposium on Perspectives in Quark Gluon Plasma Physics, GSI, 29 March 2010.
25. *Measurement of dielectron spectra in p+p and Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV*, Electromagnetic Radiation in Nuclear Collisions, CERN, 17-19 December 2007.
26. *Dilepton Trigger Performance of the HADES Spectrometer @ GSI*, Evaluation Day of the "International Graduate School - Complex Systems of Hadrons and Nuclei" (12.12.02, Giessen).
27. *The Dilepton Selection of the HADES trigger*, DoktorandenTag (10.10.02, Giessen).
28. *Online Ring Recognition with the HADES RICH*, III Lecture Week of the "International Graduate School - Complex Systems of Hadrons and Nuclei", (18.2.02-23.2.02, Rauischholzhausen Castle).

Invited Seminars

29. *Cold Nuclear Matter at the LHC mini-Bang,* invited seminar at IKF Frankfurt, 19 December 2013.
30. *Soft QCD Results from ALICE @ LHC,* invited seminar at INFN Padova, 22 March 2012.
31. *Centrality Determination in ALICE @ LHC,* invited seminar at IPN Orsay, 20 February 2012.
32. *Soft QCD results from ALICE at LHC,* Rencontres de Ion Lourds, Orsay, 17 February 2012.
33. *Measuring the hottest temperature in the Universe*, Frankfurt University, 16 April 2010.
34. *Electromagnetic Radiation from a Quark Gluon Plasma,* EP/PP seminar at CERN, 15 December 2009.

35. *Electromagnetic Radiation from a Quark Gluon Plasma*, Lawrence Berkeley National Laboratory, 18 August 2009.
36. *Electromagnetic Radiation from a Quark Gluon Plasma*, Giessen University, 16 July 2009.
37. *Electromagnetic Radiation from a Quark Gluon Plasma*, Frankfurt University, 26 March 2009.
38. *Enhancement of the dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions*, Lawrence Berkeley National Laboratory, 04 October 2007.
39. *Enhancement of the dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions*, CERN, 06 July 2007.
40. *Enhancement of the dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions*, Torino University, 28 June 2007.
41. *Enhancement of the dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions*, Frankfurt University, 27June 2007
42. *Enhancement of the dielectron continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au collisions*, Giessen University, 25 June 2007
43. *Search for QGP with electromagnetic probes*, Stony Brook University, 11 October 2006.
44. *Physics with electrons with the PHENIX experiment at RHIC*, Universita` Statale di Milano, 25 May 2006.
45. *Physics with electrons with the PHENIX experiment at RHIC*, Ecole Polytechnique Palaiseau, 23 May 2006.
46. *Physics with electrons with the PHENIX experiment at RHIC*, Forschungszentrum Jülich, 11 May 2006.
47. *Performance of the HADES Spectrometer for Dilepton Identification in the Reaction C+C at 1-2 A*
48. *The HADES Second Level Trigger: Concept and Status,* TU Munich, 22 May 2002.