

Personal informations

Name Matteo Duranti
Date of birth
Place of birth
Citizenship Italian
Gender Male
Marital status
C.F.

Contacts

E-mail

Education and formation

- 01/02/2012 **PhD in Physics - XXIV Ciclo**, Università degli Studi di Perugia, P.zza dell'Università, 1 - Perugia, *Evaluation: excellent*
Thesis Title *Measurement of the cosmic muon flux on ground with the AMS-02 detector*
Tutors Prof. Bruna Bertucci, Dott. Alberto Oliva
- 15/09/2008 **Master in Physics - Particle Physics**, Università degli Studi di Perugia, P.zza dell'Università, 1 - Perugia, *Evaluation: 108/110*
Thesis Title *Fenomeni di Channeling e Volume Reflection per protoni a 400 GeV/c in cristalli multipli*
Tutor Dott. Giovanni Ambrosi
- 14/10/2005 **Bachelor in Physics**, Università degli Studi di Perugia, P.zza dell'Università, 1 - Perugia, *Evaluation: 107/110*
Thesis Title *Simulazione numerica della raccolta di carica in rivelatori a microstrisce di silicio*
Tutor Dott. Giovanni Ambrosi
- 10/07/2002 **High school degree**, Liceo Scientifico Paolo Ruffini, Via della Verità, 8 - Viterbo

Professional experience

Positions

Feb/2017 **Level III Researcher**, *INFN Sezione di Perugia*
today
Sep/2014 **Researcher(T.D. L240-A)**, *Dipartimento di Fisica e Geologia, Università degli*
Feb/2017 *Studi di Perugia*

Jul/2014 **Researcher (T.D.)**, *INFN Sezione di Perugia*
Sep/2014

Jul/2013 **Post.Doc**, *INFN Sezione di Perugia*
Jul/2014

Mar/2012 **Post.Doc**, *INFN Sezione di Perugia*
Mar/2013

Jan/2012 **CERN Associate (USAS)**, *CERN*
Dec/2012

Selections and suitabilities

Dec/2016 **Bando 18221/2016**, *INFN Sezione di Perugia*
Winner (54°) of the selection for 58 permanent positions as Ricercatore III livello

Dec/2016 **Bando 11/2016**, *Agenzia Spaziale Italiana*
Suitable (6°) in the public selection for 16 permanent positions as Ricercatore III livello

Grants obtained/managed

Aug/2021 **Scientific coordinator**, *Accordo Attuativo ASI/INFN n.2021-43 “Realizzazione*
oggi *attività tecniche e scientifiche presso lo Space Science Data Center - SSDC”. The*
project, Kick-Off on 23/Feb/2022, foresees a budget of about 2.1€ (about 750k€
funded by ASI, 300k€ as ASI in-kind, and 1M€ as INFN in-kind).

Aug/2021 **Scientific coordinator (for the final reporting)**, *Accordo Attuativo ASI/INFN*
Sep/2021 *n.2014-037 “Realizzazione attività tecniche e scientifiche presso ASDC/SSDC”. The*
project has been concluded with a budget of about 3.8M€ (about 2.7M€ funded by
ASI and 1.1M€ as INFN in-kind).

Sep/2018 **Principal Investigator**, *“DTP - Design and optimization of a Time-resolving silicon*
Sep/2021 *tracker with PID capabilities for astro-particle physics in space” project. The project,*
submitted for an INFN call “to support research projects of young researchers” has
been granted 20k€

Apr/2018 **Principal Investigator, for INFN**, *“POX - Pangu Optimization and eXperimental*
Mar/2021 *verification” project. The project, submitted for an INAF-ASI call for “Idee per Future*
Missioni Scientifiche di Astrofisica delle Alte Energie e di Fisica Astroparticellare”,
by the University of Sassari, University of Perugia and INFN, has been granted
142k€, + 60 k€ as additional subsequent integration, (of the which 89 (+60) k€ for
INFN-Perugia)

2016-2017 **Scientific coordinator of a contract with Thales Alenia Space Italia for the**
study for new space mission (ASI Explotech action)
Offer submitted to TAS-I in Mar/2016 and project started in Jun/2017. Granted 13k€.

Institutional responsibilities

May/2020 **HERD Group leader**, *INFN Sezione di Perugia*
today

Jul/2019 **SpaceLGAD coordinator**, *INFN Sezione di Perugia*
today

- Apr/2018 **POX Group leader**, *INFN Sezione di Perugia*
today
- Mar/2018 **Local representative of Researchers and Technologists**, *INFN - Sez. Perugia*
today
- Nov/2017 **Postdoc selection board**, *INFN - Sez. Perugia*
Oct/2019
- 27/May/2018 **Member of the Scientific Committee**, “XV Seminar on Software for Nuclear,
1/Jun/2018 *Subnuclear and Applied Physics*”
- Mar/2015 **Incarico di Ricerca**, *INFN Sezione di Perugia*
Feb/2017
- Jan/2015 **Incarico di Ricerca**, *Agenzia Spaziale Italiana*
today
- Jan/2015 **AMS Group leader**, *INFN Sezione di Perugia*
Jan/2020

Specific responsibilities in the HERD collaboration

- 2020 **Contact person for the computing at CNAF (INFN) for HERD**
today Contact person for the HERD Collaboration, for the CNAF computing resources (INFN).

Specific responsibilities in the AMS collaboration

- Feb/2016 **Member of the Conference Committee**
Feb/2017 Committee (3 members) for the choice of the speaker for the conferences where to present the experiment results.
- 2014 **Responsible of the analysis software for AMS-Italy**
today Responsible of the analysis software in the CNAF computing resources (INFN) for AMS-Italy
- 2014 **Contact person for the computing at CNAF (INFN) for AMS**
today Contact person for the AMS Collaboration, for the CNAF computing resources (INFN).
- 2016 **AMS analysis coordinator**
today Coordinator of the italian data analysis activity related to the fluxes of electrons and positrons.
- 2013 **AMS analysis coordinator**
2015 Coordinator, for INFN, of the INFN-KIT joined analysis, for the measurement of the total flux of $e^+ + e^-$ and its publication [55].
- 2011 **Detector expert**
today Key person for the operations and the DAQ and monitoring software of the Silicon Tracker

Activity as paper referee

- Feb/2022 **Activity as referee**, *Il Nuovo Cimento*
today Revision of n.1 papers
- Dec/2021 **Activity as referee**, *MDPI Instruments*
today Revision of n.1 papers
- Sep/2021 **Activity as referee**, *MDPI Universe*
today Revision of n.1 papers
- Sep/2021 **Activity as referee**, *Frontiers in Physics*
today Revision of n.2 papers
- Dec/2019 **Activity as referee**, *IEEE Transactions on Nuclear Science*
today Revision of n.3 papers

Teaching

- 2017 **Metodi Computazionali per la Fisica**, *Università degli Studi di Perugia*
today Lectureship of Computational Methods for Physics in the Bachelor in Physics.
- 2015 **Laboratorio di Fisica II - Modulo 2**, *Università degli Studi di Perugia*
2017 Lectureship for the second part of the Physics II Laboratory in the Bachelor in Physics.
- 2015 **Metodi statistici per l'analisi dei dati**, *Università degli Studi di Perugia*
today Exerccitations and examinations for the course on 'Statistical Methods for the data analysis' in the Master in Physics.
- 2014 **Thesis tutor**, *Università degli Studi di Perugia*
today Tutor for several Bachelor theses
- Giovanni Bartolini, Tesi triennale, 2014;
 - Francesco Palazzetti, Tesi triennale, 2016;
 - Francesco Faldi, Tesi triennale, 2018;
 - Claudio Brugnoli, Tesi triennale, 2019;
 - David Pelosi, Tesi triennale, 2020;
 - Francesco Pascolini, Tesi triennale, 2020;
 - Gianmarco Lucchetti, Tesi triennale, 2020;
 - Andrea Serpola, Tesi triennale, 2020;
- 2013 **Thesis co-tutor**, *Università degli Studi di Perugia*
today Co-tutor for two PhD theses and for a Master thesis.
- Marta Crispoltoni, Tesi magistrale, 2013-2014;
 - Enrico Catanzani, Tesi magistrale, 2017-2018, Ciclo XXXIV;
 - Maura Graziani, Tesi PhD, 2012-2015, Ciclo XXVIII;
 - Marta Crispoltoni, Tesi PhD, 2015-2019, Ciclo XXX;
 - Enrico Catanzani, Tesi PhD, 2018-2022, Ciclo XXXIV;

Talks in conferences, workshops and seminars

- 4/Mar/2022 **Plenary talk at the Workshop: Antinuclei in the Universe?**, MIAPP-TUM, Munich, Germany
DAMPE + HERD, ALADInO and the design of future Cosmic Ray Space Experiments
- 17/Sep/2021 **Plenary invited talk at SIF2021**, *Società Italiana di Fisica, 107° Congresso Nazionale*, Online
Futuro prossimo e remoto nella rivelazione diretta dei Raggi Cosmici nello Spazio
- 8/Sep/2021 **Parallel talk at PANIC2021**, *Particle And Nuclei International Conference, 22nd edition*, Lisbon, Portugal
Opportunities of Si-microstrip LGAD for next-generation Space detectors
- 12/Apr/2021 **Invited seminar at the University of Maryland**, *Seminar cycle for students and researchers*, UMD, remote, Maryland, U.S.A.
The AMS latest results and its heritage on the design of future Cosmic Ray Space Experiments (HERD, ALADInO, AMS-100)
- 2/Feb/2021 **Solicited talk at COSPAR2021**, *Committee on Space Research, 43rd Scientific Assembly*, Sidney, Australia
The Next Generation Magnetic Spectrometer in Space - An International Science Platform for Physics and Astrophysics at Lagrange Point 2

- 1/Feb/2021 **Parallel talk at COSPAR2021**, *Committee on Space Research, 43rd Scientific Assembly*, Sidney, Australia
Development of a Penetrating particle ANalyzer for high-energy radiation measurements in space
- 25/Nov/2020 **Invited plenary talk at the Tavolo Tematico su Strumentazione Scientifica - Astrofisica, rivelatori e facility**, ASI, remote, Italy
Tecnologie e sfide della prossima generazione di rivelatori al silicio di grande area per esperimenti spaziali: microstrip LGAD
- 18/Sep/2020 **Invited plenary talk at the Guokr Young Scientist Saloon Workshop**, IHEP and remote, China
(Astro)Particle Physics in Space
- 27/Feb/2020 **Invited seminar at the Warwick University**, *Seminar cycle for PhD students and researchers*, Coventry, United Kingdom
The AMS latest results and its heritage on the design of future Cosmic Ray Space Experiments (HERD, ALADInO, AMS-100)
- 26/Feb/2020 **Invited seminar at the Birmingham University**, *Seminar cycle for PhD students and researchers*, Birmingham, United Kingdom
The AMS latest results and its heritage on the design of future Cosmic Ray Space Experiments (HERD, ALADInO, AMS-100)
- 14/Oct/2019 **Invited talk at the Light Anti-nuclei as a Probe for New Physics**, Lorentz Center, Leiden, The Netherland
Direct CR measurements and anti-matter detection: the next generation of Large Acceptance Experiments in Space
- 25/Jul/2019 **Parallel talk at the ICRC2019**, *36th International Cosmic Rays Conference*, Madison, Wisconsin, USA
Observation of Complex Time Structures in the Cosmic-Ray Electron and Positron Fluxes by the Alpha Magnetic Spectrometer on the ISS
- 7/Jun/2019 **Talk at the Workshop della CCR**, Hotel Hermitage, Isola d'Elba, Italia
AMS and DAMPE: first experiences with federated cloud solutions and a look toward the future
- 27/Feb/2019 **Talk at TREDI2019**, *14th Trento Workshop on Advanced Silicon Radiator Detectors*, Trento, Italy
Advantages and needs in time resolving tracker for astro-particle experiments in space
- 6/Sep/2018 **Invited plenary talk at the RICAP2018**, *Roma International Conference on AstroParticle Physics*, Roma Tre University, Roma, Italia
The AMS-02 detector on the International Space Station - Status and highlights, after 7 years on orbit
- 15/Jun/2018 **Talk at the Workshop della CCR**, Hotel Ambasciatori, Rimini, Italia
The AMS and DAMPE computing models and their integration into DODAS
- 17/Nov/2017 **Public presentation of the proposal**, *Bando Future missioni*, Agenzia Spaziale Italiana, Italia
MIS-26: POX (Pangu Optimization and eXperimental verification)
- 7/Nov/2017 **Invited plenary talk at the 2nd EMMI Workshop**, *Anti-matter, hyper-matter and exotica production at the LHC*, Università degli Studi di Torino, Torino, Italia
Anti-matter detection in AMS
- 7/Aug/2017 **Talk at TeVPA**, *TeV Particle Astrophysics*, Columbus, Ohio, USA
Precision Measurement of the Combined Electron and Positron Flux in Primary Cosmic Rays with AMS on the ISS

- 25/Jul/2017 **Invited seminar at the school Gamma Rays Astrophysics with CTA**, Sexten Center for Astrophysics (Sexten, Bolzano), Italia
Direct (charged) cosmic ray measurements in space in the CTA era
- 22/May/2017 **Talk at the Workshop della CCR**, L.N.G.S., Assergi, Italia
The AMS and DAMPE computing models
- 19/Mar/2017 **Invited plenary talk at the JPS Symposium**, 72th Japanese Physical Society Symposium, Osaka University, Osaka, Japan
The AMS-02 detector on the ISS - Status and highlights, after the first 6 years on orbit
- 24/Jun/2016 **Plenary talk at RICAP2016**, 6th Roma International Conference on AstroParticle Physics, Villa Tuscolana, Frascati, Italia
The AMS-02 detector on the International Space Station - Status and highlights, after the first 5 years on orbit
- 31/May/2016 **Talk in an round table in ASI on Cosmic Rays in Space**, *ASI e le missioni per Raggi Cosmici nello spazio*, ASI, Tor Vergata, Roma, Italia
AMS sulla ISS - 5 anni in orbita
- 19/Sep/2015 **Invited plenary talk at PIC2015**, XXXV Physics in Collision Conference, Coventry, Inghilterra
Low Energy (GeV - TeV) Cosmic Rays Recent Results
- 31/Aug/2015 **Talk at ICRC2015**, 34th International Cosmic Rays Conference, L'Aia, Olanda
Precision measurement of the e^- , e^+ , e^+e^- fluxes with AMS
- 09/Jul/2014 **Invited seminar at the Karlsruhe Institute of Technology**, *Seminar cycle about Dark Matter*, Karlsruhe, Germania
Indirect Dark Matter search in space and the AMS-02 detector on the International Space Station after 3 years on orbit
- 17/Mar/2014 **Plenary talk at the Rencontres de Moriond**, *The XLIXth Rencontres de Moriond, ELECTROWEAK INTERACTIONS AND UNIFIED THEORIES*, La Thuile, Aosta, Italy
The AMS-02 detector on the International Space Station Status and perspectives after 1000 days on orbit
- 25/Sep/2013 **Talk at ICATPP13**, 14th ICATPP Conference on Astroparticle, Particle, Space Physics and Detectors for Physics Applications *Experimental particle physics, detection of astrophysical sources and cosmic rays as tools for probing the contents of the Universe*, Villa Olmo, Como, Italy
Precision measurement of the Electrons plus Positrons Spectrum with AMS
- 04/Apr/2013 **Talk at IFAE 2013**, *Incontri di Fisica delle Alte Energie - XII Edizione*, Cittadella Universitaria di Monserrato, Cagliari, Italia
AMS-02 - Stato e risultati.
- 17/Sep/2012 **Invited talk at Vertex2012**, *The 21st International Workshop on Vertex Detectors*, Seogwipo KAL Hotel, Jeju Island, Korea
The AMS-02 Silicon Tracker (The Detector after 500 Days in Space).
- 07/Jul/2011 **Talk at RD11**, 10th International Conference on Large Scale Applications and Radiation Hardness of Semiconductor Detectors, Firenze, Italia
The AMS-02 Silicon Tracker Status.
- 21/Sep/2010 **Talk at SIF2010**, XCVI Congresso Nazionale della Società Italiana di Fisica, Bologna, Italia
Lo spettrometro magnetico dell'Alpha Magnetic Spectrometer 02.

30/Sep/2009 **Talk at SIF2009**, XCV Congresso Nazionale della Società Italiana di Fisica, Bari, Italia
Le prestazioni del tracciatore a microstrisce di silicio per l'esperimento AMS-02.

Additional formation

- 2015 **Geant4 Training Course** - Gran Sasso Science Institute, L'Aquila, Italy
- 2013 **INFN School Of Statistics 2013** - Vietri sul mare, Salerno, Italy
- 2010 **ISAPP 2010 - International School on AstroParticle Physics, European Doctorate School, Multi-Messenger Approach to Astroparticle Physics** - Universidad de Zaragoza, Zaragoza, Spain
- 2009 **MAPS, Methods of Analysis for Physics in Space** - INFN Sez. Perugia, Italy
- 2009 **Scuola F. Bonaudi, XIX Giornate di Studio sui Rivelatori** - Università degli studi e INFN Sez. Torino, Torino, Italy

Skills

Programming languages C++, Bash, FORTRAN, PHP, HTML
Editing L^AT_EX, MS-Office
Environments Unix, Linux, Mac-Os, iOS, MS-Windows
Data analysis ROOT
Simulation Geant4
Mathematics and Statistics Mathematica, Statistical techniques for the data analysis
Electronics FPGA programming and use
DAQ Lab-View, standard NIM, standard CAMAC, DAQ custom (AMS-02)
Detectors Microstrip silicon detectors. Scintillators and photomultipliers. Calorimetry.

Languages

Italian Mother tongue *Native language*
English High level *Good knowledge of English, either spoken or written. Able to sustain smoothly a conversation and to produce written documents*
Spanish Medium level *Scholastic knowledge of the language. Able to understand and speak*
French Basic level *Basic knowledge of the language. Able to understand and produce simple sentences*

Outreach

- 14/Feb/2022 **Educational seminar for high school students, for the seminar cycle “A volte ritornano 7...”**., *La Fisica delle particelle elementari nello spazio: “le astroparticelle”*, Liceo Ruffini, Viterbo
Circa 50 fra studenti e docenti.
- 12/Nov/2021 **Educational seminar for the INFN CHNet Training Camp**, *Estremamente piccolo, infinitamente lontano: viaggio ai confini della natura*, Wintergarden, Duomo, Viterbo
Circa 20 partecipanti.
- 29/Apr/2021 **Educational seminar for high school students**, *La Fisica delle particelle elementari nello spazio: le “astroparticelle”*, Webinar - Liceo Galilei, On-line, Perugia
Circa 50 studenti.
- 06/Apr/2021 **Educational seminar for high school students**, *La Fisica delle particelle elementari nello spazio: le “astroparticelle”*, Webinar - Liceo Galilei, On-line, Perugia
Circa 20-30 studenti.
- 01/Mar/2021 **Educational seminar for high school students, for the seminar cycle “A volte ritornano 6...”**., *La Fisica delle particelle elementari nello spazio: “le astroparticelle”*, Webinar - Liceo Ruffini di Viterbo, On-line
- 31/Jan/2021 **Interview by BarbascuraX on Dark Matter for “Particelle brutte”**, Videos - Instagram page INFN, Video
- 31/Oct/2020 **Contribution to Dark Matter Day INFN 2020**, Videos - Facebook page INFN, Video
- 20/Apr/2020 **Educational seminar for high school students, for the seminar cycle “A volte ritornano 5...”**., *La Fisica delle particelle elementari nello spazio: “le astroparticelle”*, Webinar - Liceo Ruffini di Viterbo, On-line
- 20/Dec/2019 **Educational seminar for high school students**, *La Fisica delle particelle elementari nello spazio: le “astroparticelle”*, Liceo Marconi, Foligno
Circa 20-30 studenti.
- 03/Dec/2019 **Educational seminar for high school students**, *La Fisica delle particelle elementari nello spazio: le “astroparticelle”*, Liceo Redi, Arezzo
Circa 20-30 studenti.
- 11/Mar/2019 **Educational seminar for high school students**, *La Fisica delle particelle elementari nello spazio: le “astroparticelle”*, Liceo Galilei, Perugia
Circa 20-30 studenti.
- 15/Feb/2019 **Public educational seminar**, *La Fisica delle particelle elementari nello spazio: le “astroparticelle”*, Laboratorio Scienze Sperimentali, Foligno
Circa 50 persone.
- 01/Feb/2019 **Educational seminar for high school students, for the seminar cycle “A volte ritornano 4...”**., *La Fisica delle particelle elementari nello spazio: “le astroparticelle”*, Liceo Ruffini, Viterbo
Circa 50 fra studenti e docenti.
- 15/Feb/2018 **Educational seminar for high school students**, *La Fisica delle particelle elementari nello spazio*, Liceo Giordano Bruno, Perugia
Circa 20-30 studenti.
- 06/Feb/2018 **Educational seminar for high school students**, *La Fisica delle particelle elementari nello spazio*, Liceo Marconi, Foligno
Circa 20-30 studenti.

- 02/Feb/2018 **Educational seminar for high school students, for the seminar cycle “A volte ritornano 3...”**., *La Fisica delle particelle elementari nello spazio*, Liceo Scientifico P.Ruffini, Viterbo
Circa 50 fra studenti e docenti.
- 26/Jan/2018 **Educational seminar for high school students**, *La Fisica delle particelle elementari nello spazio*, Liceo Donatelli, Terni
Circa 20-30 studenti.
- 05/Apr/2017 **Educational seminar for high school students, for the Masterclass Fermi**, *Esperimenti di fisica delle particelle nello spazio*, INFN e Dipartimento Fisica e Geologia Università, Perugia
Circa 50 studenti.
- 07/Mar/2017 **Educational seminar for high school students for the Masterclass**, *Dall’infinitamente piccolo all’infinitamente grande - Fisica delle Particelle Elementari e Astrofisica: le Astroparticelle!*, INFN e Dipartimento Fisica e Geologia Università, Perugia
Circa 50 studenti.
- 24/Feb/2017 **Educational seminar for high school students, for the seminar cycle “A volte ritornano 2...”**., *La Fisica delle particelle elementari nello spazio*, Liceo Scientifico P.Ruffini, Viterbo
Circa 50 fra studenti e docenti.
- 2017 today **CERN tour organization**, *Università degli Studi di Perugia*, Corso di laurea in Fisica
One of the two main organizers for the tours at CERN for the students of the degree in Physics
- 2016 today **International Cosmic Day**, *Cosmic Rays demonstrator for high school*, Dipartimento di Fisica e Geologia e Sezione INFN, Perugia
Educational demonstrator of measurement of the cosmic ray muons on ground, realized for the International Cosmic Day.
- 15/Jan/2016 **Educational seminar for high school students, for the seminar cycle “A volte ritornano...”**., *La Fisica delle particelle elementari nello spazio*, Liceo Scientifico P.Ruffini, Viterbo
Circa 50 fra studenti e docenti.
- 2015 2018 **SHARPER - European Researchers’ Night**, Dipartimento di Fisica e Geologia e Sezione INFN, Perugia
Cosmic Rays educational demonstrator, presentation of the clean room activities and virtual tour of the AMS POCC at CERN, organized for SHARPER, SHaring Researchers’ Passions for Engagement and Responsibility, one of the 6 projects of the European Researchers’ Night promoted and funded by the European Commission for the actions Marie Skłodowska-Curie.
- 10/Mar/2015 **Educational seminar for high school students for the Masterclass**, *La fisica sperimentale nella spazio - Le astroparticelle*, Dipartimento di Fisica e Geologia e Sezione INFN, Perugia
Circa 50 studenti.
- 2022 today **Educational web-site** <https://herd.cloud.infn.it>
Contents management
- 2013 2019 **Educational web-site** <http://www.ams02.org>
Contents management

List of publications

- [1] Duranti, M., et al., 2021: *Advantages and Requirements in Time Resolving Tracking for Astroparticle Experiments in Space*. Instruments, **5 (2)**, 20, 10.3390/instruments5020020, URL <http://dx.doi.org/10.3390/instruments5020020>.
- [2] Aguilar, M., et al., 2021: *Properties of Iron Primary Cosmic Rays: Results from the Alpha Magnetic Spectrometer*. Phys. Rev. Lett., **126**, 041104, 10.1103/PhysRevLett.126.041104, URL <https://link.aps.org/doi/10.1103/PhysRevLett.126.041104>.
- [3] Aguilar, M., et al., 2021: *Properties of Heavy Secondary Fluorine Cosmic Rays: Results from the Alpha Magnetic Spectrometer*. Phys. Rev. Lett., **126**, 081102, 10.1103/PhysRevLett.126.081102, URL <https://link.aps.org/doi/10.1103/PhysRevLett.126.081102>.
- [4] Aguilar, M., et al., 2021: *The Alpha Magnetic Spectrometer (AMS) on the international space station: Part II — Results from the first seven years*. Physics Reports, **894**, 1 – 116, <https://doi.org/10.1016/j.physrep.2020.09.003>, URL <http://www.sciencedirect.com/science/article/pii/S0370157320303434>, the Alpha Magnetic Spectrometer (AMS) on the International Space Station: Part II - Results from the First Seven Years.
- [5] Battiston, R., et al., 2021: *High precision particle astrophysics as a new window on the universe with an Antimatter Large Acceptance Detector In Orbit (ALADInO)*. Experimental Astronomy, 10.1007/s10686-021-09708-w, URL <https://doi.org/10.1007/s10686-021-09708-w>.
- [6] Aguilar, M. et al., 2021: *Periodicities in the Daily Proton Fluxes from 2011 to 2019 Measured by the Alpha Magnetic Spectrometer on the International Space Station from 1 to 100 GV*. Phys. Rev. Lett., **127 (27)**, 271102, 10.1103/PhysRevLett.127.271102.
- [7] Aguilar, M. et al., 2021: *Properties of a New Group of Cosmic Nuclei: Results from the Alpha Magnetic Spectrometer on Sodium, Aluminum, and Nitrogen*. Phys. Rev. Lett., **127 (2)**, 02101, 10.1103/PhysRevLett.127.021101, [Erratum: Phys.Rev.Lett. 127, 159901 (2021)].
- [8] Pelosi, D., N. Tomassetti, and M. Duranti, 2021: *A web application for monitoring cosmic rays and solar activity*. PoS, **ICRC2021**, 1259, 10.22323/1.395.1259.
- [9] Pelosi, D., N. Tomassetti, and M. Duranti, 2021: *Development of a web application for monitoring solar activity and cosmic radiation*. Nuovo Cim. C, **44 (2-3-3)**, 97, 10.1393/ncc/i2021-21097-2, 2101.09366.
- [10] Adriani, O., et al., 2020: *Tracker-In-Calorimeter (TIC): a calorimetric approach to tracking gamma rays in space experiments*. Journal of Instrumentation, **15 (09)**, P09034–P09034, 10.1088/1748-0221/15/09/p09034, URL <https://doi.org/10.1088/1748-0221/15/09/p09034>.

- [11] Aguilar, M., et al., 2020: *Properties of Neon, Magnesium, and Silicon Primary Cosmic Rays Results from the Alpha Magnetic Spectrometer*. Physical Review Letters, **124** (21), 211 102, 10.1103/PhysRevLett.124.211102.
- [12] Aguilar, M., et al., 2019: *Properties of Cosmic Helium Isotopes Measured by the Alpha Magnetic Spectrometer*. Phys. Rev. Lett., **123**, 181 102, 10.1103/PhysRevLett.123.181102, URL <https://link.aps.org/doi/10.1103/PhysRevLett.123.181102>.
- [13] Aguilar, M., et al., 2019: *Towards Understanding the Origin of Cosmic-Ray Electrons*. Phys. Rev. Lett., **122**, 101 101, 10.1103/PhysRevLett.122.101101, URL <https://link.aps.org/doi/10.1103/PhysRevLett.122.101101>.
- [14] Aguilar, M., et al., 2019: *Towards Understanding the Origin of Cosmic-Ray Positrons*. Phys. Rev. Lett., **122**, 041 102, 10.1103/PhysRevLett.122.041102, URL <https://link.aps.org/doi/10.1103/PhysRevLett.122.041102>.
- [15] Berti, E., et al., 2019: *CaloCube: a new concept calorimeter for the detection of high energy cosmic rays in space*. Journal of Physics: Conference Series, **1162**, 012 042, 10.1088/1742-6596/1162/1/012042, URL <https://doi.org/10.1088/1742-6596/1162/1/012042>.
- [16] Bigongiari, G., et al., 2019: *A New Approach to Calorimetry in Space-Based Experiments for High-Energy Cosmic Rays*. Universe, **5**, 72, 10.3390/universe5030072.
- [17] Tykhonov, A., et al., 2019: *In-flight performance of the DAMPE silicon tracker*. Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, **924**, 309–315, <https://doi.org/10.1016/j.nima.2018.06.036>, URL <http://www.sciencedirect.com/science/article/pii/S0168900218307575>.
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PERSONAL INFORMATION

Daniele Spiga

Gender Male | Date of birth | Nationality Italian EPR Technologist

WORK EXPERIENCE

2015 – Present **Technologist**

Istituto Nazionale di Fisica Nucleare (INFN) in Perugia; Via A. Pascoli, 06123 Perugia (ITALY).
<http://www.infn.it>

- Distributed computing in High Energy Physics, heterogeneous resources integration and automation of complex computational platforms for scientific data processing.
- Coordinator of Software and Computing for CMS-Italy, supervising the budget, operations, developments of the Tier-1 and 4 Tier-2 sites.
- Coordinator of the PLANET project, funded by INFN CSN5
- Coordinator of the "Evolution and New Applications" work package of the INFN-Cloud Computing national project.
- Coordinator of task 2.4 (HPC-HTC integration) for CNAF Reloaded project, to integrate the opportunistic resources of Leonardo machine at CINECA
- Coordinator of the Dynamic Resource Provisioning group of CMS experiment at CERN
- Co-PI of *PowerAtCMS*, PRACE Project Access Grant for the exploitation of Marconi100 resources at CINECA.
- Coordinator of the Dynamic On-Demand Analysis Service (DODAS) project, a Thematic Service of the EGI-ACE H2020 project supporting and integrating FERMI, AMS and HERD analysis workflow.
- HL-LHC representative in the ESCAPE Technical Board
- Member of the Academic Board of the PhD in Physics at the University of Perugia
- In EU projects: EOSC-Pilot, INDIGO-Datacloud, EOSC-hub, ESCAPE, EGI-ACE, Intertwins

2010-2015 **Staff Member at CERN**

Technical leader of collaborative projects between ATLAS and CMS Experiment and CERN. Designing and developing common solutions for the computing of Large Hadron Colliders experiments.

2009-2010 **Fellow at CERN**

Coordinator of the CRAB Project, the distributed data analysis system at CMS.

2008 **Project Associate at CERN**

Software developer of Workload and Data Management of CMS

EDUCATION AND TRAINING

2007 **PhD in Experimental Physics**

Università degli studi di Perugia, Perugia (ITALY). Thesis on Branching Ratios Measurement in Top quark decay

2004 **Master in Physics**

Università degli studi di Perugia, Perugia (ITALY). Thesis on Studi di risoluzione dell'energia dei Jet di particelle nel rivelatore CMS

2009–2016 **Training courses**

- Communicating to convince
- Managing by project
- Agile software development with SCRUM
- Agile Infrastructure & Puppet for Service Managers: getting started
- Python-Hands-on: Introduction and Advanced
- Introduction to Databases and Database Design

PERSONAL SKILLS

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B2	B2	B2
French	B2	B2	B1	B1	A2

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

Digital skills

- Expert in programming languages: C++, Python, Scripting
- Expert in Distributed Computing design and implementation
- Expert in scientific application migration to cloud (container, microservice and automation)
- Expert in integration of HTC - HPC - Cloud systems for large scala data processing and interactive analysis

Job-related skills

- Good organisational skill gained coordinating teams of geographically distributed members, tens of members from distinct institutions and nations.
- Very good leadership skill achieved as couch of several software development projects since the past 15 years, in national and international environments.
- Good communication skill acquired in the role of coordinator of several national and international projects as well as with organization of several national and international training and tutorial sessions.

Teaching

- Data Science e Applicazioni in Fisica Modulo II, Università degli Studi di Perugia Lectureship of Data Science for Physics in the Master in Physics
- Co-organizer of advanced computing school called International PhD School on Open Science Cloud (SOSC) covering topics ranging from Intelligent Systems and Machine/Deep Learning, to advanced Cloud computing infrastructure. The SOSC school cycle is currently at its 4th edition. It started in Perugia under his vision and organization, then expanded to more co-coordinators and had other editions in Perugia and Bologna so far
 - SOSC17: First International PhD School Open Science Cloud: on Distributed Cloud Computing (Perugia, June 2017, <http://fisgeo.unipg.it/sosc17/>)
 - SOSC18: Second International PhD School Open Science Cloud, on Predictive Models (Perugia, September 2018, <http://fisgeo.unipg.it/sosc18/>)
 - SOSC19: Third International PhD School Open Science Cloud, on Intelligent Systems (Bologna, September 2019 <https://web.infn.it/SOSC19>)
- Since 2005 supervisor and mentor of students. Overall 17 between MD students, Fellow (CERN / INFN) and PhD at University of Perugia.

ADDITIONAL INFORMATION

-
- Evaluation metrics**
- Author and co-author of more than 900 publications in scientific journals
 - H-index (Scopus): 103
 - Citations (Scopus): 57457
 - Indexed products in the last 10 years (Scopus): 827
- Conferences** 17 oral presentations at international conferences
- Honours and awards** “CMS Achievement Award for taking major responsibility for the CRAB project.” for the year 2010

"According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV."
vspace1 cm Daniele Spiga

Curriculum Vitae

Nome **MOVILEANU MARIA**
e-mail

STUDI

1/04/1994 – 09/12/1999

Corso di Dottorato in Fisica, Università di Bucarest, Facoltà di Fisica

Titolo della tesi: “La ricerca dell’antimateria nei raggi cosmici con Alpha Magnetic Spectrometer”

1/10/1988- 23/06/1993

Corso di Laurea in Fisica , Università di Bucarest, Facoltà di Fisica

Titolo della tesi: "La produzione dei protoni di alta energia nella reazione $^{16}\text{O}-^{27}\text{Al}$ ad un energia incidente di 19.3MeV/nucl."

ESPERIENZA LAVORATIVA E DI RICERCA

1/05/2014 – presente

Istituto Nazionale di Fisica Nucleare, Sezione di Perugia, IT

Tecnologo III Livello

Responsabile scientifico della Camera Bianca della Sezione INFN di Perugia.

Attività di ricerca tecnologica: sviluppo di rivelatori a stato solido per i progetti PAN-EU, CMS, HASPIDE, CTA, FOOT, 3d-SiAm, DAMPE, LIMADOU;

1/05/2006- 30/04/2014

Universita di Perugia, Dipartimento di Fisica

Assegno di ricerca: “Tecniche avanzate di assemblaggio integrato di rivelatori di particelle a stato solido”

20/11/2002- 30/04/2006

Istituto Nazionale di Fisica Nucleare, Sezione di Perugia

Associato alla ricerca con FAI - Esperimento AMS02

23/10/ 2000- 23/10/ 2002

Istituto Nazionale di Fisica Nucleare, Sezione di Perugia, IT “on leave” da IMT-Bucarest

Borsa di studio post-dottorato per stranieri: Esperimento AMS02

13/04 – 13/08/1994; Nov- Dec 1994; 01/10/ 1995-7/07/1997

Istituto Nazionale di Fisica Nucleare, Sezione di Perugia, IT “on leave” from IMT-Bucharest

Borsa di studio: Esperimento AMS01

01/09/1993– 13/02/2003

National Institute for research and Development of Microtechnologies (IMT)– Bucharest.

Ricercatore III Livello

Sett. 1992 e Aprile –Giugno 1993

Laboratorio di Problemi Nucleari, Joint Institute of Nuclear Research (JINR) - Dubna, Russia,

Borsa di studio per studenti - Sperimenti con ioni pesanti

RESPONSABILITA

24 Gennaio 2018 – oggi	Responsabile Scientifica della Camera Bianca della Sez. INFN di Perugia
01 Gennaio 2020 – oggi	Coordinatrice del WorkPackage3:Tracker per la costruzione del tracciatore al silicio a microstrip nel Progetto Europeo PAN
Aprile 2016-Maggio 2017	Responsabile Locale del esperimento LIMADOU (costruzione del Tracciatore al Silicio)