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Nicolas De Angelis

Curriculum Vitae

Research Experience

Feb 2024 – **Post-doctoral researcher**, *Istituto di Astrofisica e Planetologia Spaziali (IAPS), National Institute for Astrophysics (INAF)*, Rome, Italy.
Development of experiments for X and Gamma Ray Astronomy from space for the CUSP, SWIPE, PRIN MIUR 2020 Hype-X, IXPE, eXTP and HERMES projects
Outreach activities: IAPS Open Days 2024, Nights of Research Rome 2024

Sept 2019 – Dec 2023 **PhD in high energy astrophysics**, *Département de Physique Nucléaire et Corpusculaire (DPNC), University of Geneva*, Geneva, Switzerland.
PhD thesis: Development of the Next Generation Space-based Compton Polarimeter and Energy Resolved Polarization Analysis of Gamma-Ray Bursts Prompt Emission – `https://doi.org/10.13097/archive-ouverte/unige:173869`
Development of the next generation Compton polarimeter POLAR-2: SiPM characterization, Optical characterization and Geant4 simulation, data acquisition with ASIC/FPGA-based electronics, Space qualification campaigns (irradiation, vibration and shock, thermal vacuum cycling), Mechanical assembly/design, Gamma-ray detector calibration
Gamma-Ray Burst polarization data analysis with the POLAR data
Involved in the development of other future space-based experiments: eXTP, LEAP
Research work published in peer-reviewed journals and presented in international conferences/workshops
Doctoral lectures: Gas detectors, Semi-conductor detectors, Bayesian statistics, Bayesian methods applied to astrophysics, High energy astrophysics, Advanced scientific computing
Outreach activities: Nuit de la Science 2018, Nuit de la Science 2022, Young Researchers Day 2023

Sept 2019 – June 2023 **Teaching Assistant**, *Section de Physique, University of Geneva*, Geneva, Switzerland.
Teaching experimental laboratory of physics (classical mechanics, thermodynamics, optics, electronics, nuclear physics) to biology students - 8 hours per week (2019-2020)
Teaching general physics (classical mechanics, thermodynamics, electrodynamics, hydrodynamics, elasticity) to biology, geology, pharmacy, and IT students - 4 hours per week (2020-2023)

Apr 2018 – July 2019 **Master Thesis**, *Département de Physique Nucléaire et Corpusculaire (DPNC), University of Geneva*, Geneva, Switzerland.
Studies of readout electronics and optical elements for a gamma-ray telescope (CTA SST-1M) – `https://cds.cern.ch/record/2683289`
Work presented at the CTA Consortium meeting of Lugano in June 2019

Sept–Dec 2018 **Research and Teaching Assistant**, *Département de Physique de la Matière Quantique (DQMP), University of Geneva*, Geneva, Switzerland.
Teaching experimental laboratory of physics to biology students - 4 hours per week

Summer 2017 **Internship at CERN in the group of Prof. Iacobucci (ATLAS collaboration)**, *European Organization for Nuclear Research*, Geneva, Switzerland.
Finite element simulation of hybrid HV-CMOS cross coupling

Education and Training

2017–2019 **Master's degree in Nuclear and Particle Physics**, *Département de Physique Nucléaire et Corpusculaire (DPNC), University of Geneva*, Geneva, Switzerland.

2014–2017 **Bachelor's degree in Physics**, *University of Geneva*, Geneva, Switzerland.

2011–2014 **French Baccalaureat in Science (A-Level equivalent) with Honours, major in engineering sciences and mathematics**, *Lycée Charles Poncet*, Cluses, France.

Relevant Skills

Software	LaTeX; Matlab; Mathematica; Cadence PSpice; LabView; COMSOL Multiphysics; SolidWorks; Catia; mecaflux Heliciel; Igor Pro; Maple; Adobe Illustrator/Lightroom; Gimp; Microsoft Office Suite
Programming language	Python; C; C++; ROOT; Geant4; Bash; basic knowledge of R and C#
Experimental	Work in Clean Room; Radioactive Sources (alpha, beta, gamma, neutron); Synchrotron Facilities; X-Ray Tubes; Radiation Protection; Instrument Design and Development, Assembly, and Calibration; Space Qualification: Irradiation, Thermal Vacuum Cycling, Vibration and Shock Test, UV irradiation, Outgassing; Optical Characterization
Simulation	Geant4 Radiation Simulation; Geant4 Optical Simulation; Electronics PSpice Simulation; Multi-Physics Simulation; Monte Carlo Simulation
Data Analysis	Forward Folding; threeml; Multi-Likelihood Analysis; Spectro-Polarimetric analysis; Bayesian Analysis; Signal Processing
Teaching, Outreach, Supervision	Teaching General Physics Bachelor-level Courses; Teaching Astrophysics/Instrumentation Master-level Courses; Teaching Bachelor Physics Laboratory Courses; Presenting Research at Public Events; Development of Animations and Figures for Outreach; Supervision of Engineering internship students; Supervision of Physics Summer Student from CERN

Languages

French	Mother Tongue	
English	Fluent	
Italian	Fluent	
German	Basic	*Basic words and phrases only*
Russian	Basic	*Basic words and phrases only*

Interests

- Amateur Astronomy, Photography and Astrophotography
- Sport: Running, Climbing, Yoga, Badminton, Hiking, Swimming, Cycling
- Space exploration, Science & Engineering

Nicolas De Angelis,
17th July 2024