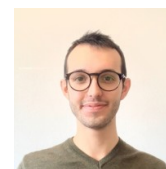


Riccardo Rossini

Born in Cremona (Italy), 21/11/1997.

✉ riccardo.rossini01@universitadipavia.it

in riccardo-rossini  0000-0001-5273-344X






Education



- 2021 – now  **Ph.D. student in Physics, University of Pavia & INFN Pavia**
Research topics: Nuclear Physics, Physics of fundamental interaction, Muonic atom X-ray Emission Spectroscopy. Activity within the FAMU (INFN, CSN III) and CHNet-MAXI (INFN, CSN V) experiments.
Internal supervisor: Prof Alessandro Menegolli.
External supervisor: Dr Massimiliano Clemenza (INFN Milano-Bicocca).
Visiting PhD Candidate at the **University of Milano-Bicocca** (from Nov. 2022).
Long-term Visitor at the **Rutherford Appleton Laboratory**, Didcot, UK (from June 2022).
- 2019 – 2021  **Master's Degree in Physics, University of Milano-Bicocca**
Curriculum in Particle and Applied Physics. Mark: **110/110, cum Laude**.
Thesis title: *Multidisciplinary protocol in the study of meteorites: γ -ray spectroscopy and neutron techniques combined with μ -Raman and SEM-EDS*.
Supervisors: Prof Giuseppe Gorini, Dr Maya Musa (Gulf Institute of Gemology), Dr Daniela Di Martino, Dr Massimiliano Clemenza.
- 2016 – 2019  **Bachelor Degree in Physics, University of Milano-Bicocca**
Mark: **107/110**
Thesis title: *Neutron studies on $\beta \Rightarrow \alpha$ transition in tin-based commercial and historical samples*. Experimental campaign at the ISIS Neutron and Muons Source (Didcot, UK) on 7-11 Oct. 2019.
Supervisors: Dr Daniela Di Martino, Dr Curzio Merlo.

Further training activities

National & International Schools

- 2023  **X International Geant4 School** (Pavia, Italy, 16-20 January 2023).
- 2022  **INFN School of Statistics 2022** (Paestum, Italy, 15-20 May 2022).
- 2021  **AMARCH 2021**, theoretical and practical school on X-Ray Fluorescence (XRF) and X-Ray Diffraction (XRD) in archaeometry (online, 10-12 February 2021).

Teaching Experience

- 2022 – now  **Laboratory of Physics III**, University of Pavia
Lecturer and tutor (26h) of Nuclear and Subnuclear Physics experiments for 3rd-year students of the Bachelor Degree in Physics. Focus: detection of cosmic muons with scintillators read by SiPMs.
-  **Physics**, University of Pavia
Tutor (30h) of General Physics (lectures and problem solving) for 1st-year students of the Bachelor Degree in Digital Technology for Construction and Environment.

Teaching Experience (continued)

- 2021 – 2022 **Physics I**, University of Milano-Bicocca
Tutor (40h) for the problem solving in mechanics, thermodynamics and special relativity for 1st-year students of the Bachelor Degree in Physics.
- 2020 – 2021 **Physics**, University of Milano-Bicocca
Support tutor (78h) for 1st year students of the Bachelor Degree in Physics.
- 2020 **LABEX project**, University of Milano-Bicocca
Tutor (46h) for the LABEX outreach project (laboratory of Modern Physics) for High School students. Focus of the work: scintillation chamber for the detection of cosmic muons.

Further Experience & Personal Interests




- Science communication **Volunteer** (2018-2020) at the LABEX project, University of Milano-Bicocca.
- Student representative **Student rep.** (2017 – 2021) in the Physics Department of the University of Milano-Bicocca. Vice-president (2017 – 2019) of the CPDS commission of the same department.
- Organisation/Leading skills **As a student rep.** I gained experience in public relations and organisation skills. I organised and managed a trip to ITER (France) for 50 students. I was Staff Leader at the SpaceJump seminar with ESA astronaut Samantha Cristoforetti (Milano-Bicocca, May 2018), leading and helping the staff coping with about 800 attendees.

Skills





- Languages **Italian native.**
English C1 (advanced level in CEFR), CAE C1 certificate achieved in 2013.
French B1 (intermediate level in CEFR).
- Coding **C, C++, Python, MATLAB, ROOT, L^AT_EX, GEANT4.** Software for the analysis of Diffraction patterns (Mantid, GSAS)
- Hardware **Nuclear Physics instrumentation:** scintillation and HPGe detectors, PMT, SiPM; NIM and VME electronics, DAQ systems; proton, muon and neutron beam setups.
Material analysis instrumentation: ToF Neutron Diffraction, radioactivity measurements with gamma spectrometry, Raman, SEM, XRF.

National and International Conferences

International Conferences

- NDIP20 (2022)  **9th Conference on New Development in Photodetection** (Troyes, France, 4-8 July 2022). Poster presentations (×6):
R. Rossini, R. Benocci, et al.; *Characterisation of muon and proton beam monitors based on scintillating fibers with a SiPM read-out.*
R. Benocci, R. Bertoni, et al.; *Large area LaBr₃:Ce crystals read by SiPM arrays with improved timing and temperature gain drift control.*
R. Benocci, M. Bonesini, et al.; *Characterisation of solid-state detectors for MIR radiation around 7 μm.*
M. Bonesini, A. Menegolli, et al.; *Comparison of new SiPM models for applications in High-Energy Physics.*
R. Rossini for the HERD Collaboration; *Beam test characterisation of SiPMs reading a Plastic Scintillator Prototype for the space-based cosmic ray experiment HERD.*
R. Rossini for the ICARUS Collaboration; *The scintillation light detection system of ICARUS T600: hardware implementation and early results.*
- PM22 (2022)  **15th Pisa Meeting on Advanced Detectors** (La Biodola, Isola d'Elba, Italy, 22-28 May 2022). Poster presentation:
R. Rossini, R. Benocci, et al.; *Characterisation of a scintillating fibre-based hodoscope exposed to the CNAO low-energy proton beam.*
- ICRM-LLRMT 22 (2022)  **8th Conference of the International Committee for Radionuclide Metrology on Low Level Radiation Measurements Techniques** (L'Aquila, Italy, 2-6 May 2022). Plenary talk:
R. Rossini, D. Di Martino, et al.; *Low-background gamma spectroscopy and neutron diffraction in the study of stony meteorites.*

Workshops and National Conferences

- 108th SIF (2022)  **108th National Congress of the Italian Physical Society** (Milan, Italy, 12-16 September 2022). Talk:
R. Rossini for the FAMU Collaboration; *Determination of the Zemach radius of the proton by exciting the spin-flip in muonic atoms: the FAMU experiment.*
- 33rd SISN (2022)  **33rd National Congress of the Neutron Scattering Society** (Milan, Italy, 12-16 September 2022). Talk:
R. Rossini, D. Di Martino, et al.; *Neutron capture and neutron diffraction techniques in the characterisation of stony meteorites.*
- 107th SIF (2021)  **107th National Congress of the Italian Physical Society** (online, 13-17 September 2021). Talk:
R. Rossini, D. Di Martino, et al.; *Nuovo protocollo multidisciplinare non invasivo per lo studio di meteoriti tramite spettroscopia gamma con HPGe e tecniche di indagine neutronica su sorgenti impulsate.*
- PLS 2021  **National workshop "Stage e laboratori per la didattica e l'orientamento formativo in fisica"** within the Piano Lauree Scientifiche (PLS) project by the Italian Ministry of Public Education (online, 1-2 July 2021). Talk: R. Rossini, A. Nava, M. Piarulli, L. D'Alfonso; *LabEx ai tempi del COVID.*

National and International Conferences (continued)

- IGIIC 2018 **18th Lo Stato dell'Arte National Congress of the Italian Group of the International Institute for Conservation (IGIIC)** (online, 11-21 December 2020). Talk: D. Di Martino, R. Rossini, et al.; *Il degrado delle leghe di stagno nelle canne d'organo: studio multidisciplinare non distruttivo e prospettive di ricerca*.
- 106th SIF (2020) **106th National Congress of the Italian Physical Society** (online, 14-18 September 2020). Talk (as 2nd author and speaker): D. Di Martino, R. Rossini, et al.; *Il degrado delle canne d'organo storiche a base stagno: risultati delle analisi Raman e con neutroni*.

References

Available on Request

Research Publications by Riccardo Rossini

- 1 M. Bonesini, R. Benocci, R. Bertoni, *et al.*, “Large area labr3:ce crystals read by sipm arrays with improved timing and temperature gain drift control,” *NIM A*, vol. 1046, p. 167 677, 2023, ISSN: 0168-9002. [DOI: 10.1016/j.nima.2022.167677](https://doi.org/10.1016/j.nima.2022.167677).
- 2 M. Bonesini, C. De Vecchi, A. Menegolli, *et al.*, “Comparison of new sipm devices for applications in high-energy physics,” *NIM A*, vol. 1047, p. 167 903, 2023, ISSN: 0168-9002. [DOI: 10.1016/j.nima.2022.167903](https://doi.org/10.1016/j.nima.2022.167903).
- 3 R. Rossini, R. Benocci, R. Bertoni, *et al.*, “Characterisation of a scintillating fibre-based hodoscope exposed to the cnao low-energy proton beam,” *NIM A*, vol. 1046, p. 167 746, 2023, ISSN: 0168-9002. [DOI: 10.1016/j.nima.2022.167746](https://doi.org/10.1016/j.nima.2022.167746).
- 4 R. Rossini, R. Benocci, R. Bertoni, *et al.*, “Characterisation of muon and proton beam monitors based on scintillating fibres with a sipm read-out,” *NIM A*, vol. 1046, p. 167 684, 2023, ISSN: 0168-9002. [DOI: 10.1016/j.nima.2022.167684](https://doi.org/10.1016/j.nima.2022.167684).
- 5 R. Rossini, M. Clemenza, D. Di Martino, *et al.*, “Low-background gamma spectrometry and neutron diffraction in the study of stony meteorites,” *Applied Radiation and Isotopes*, vol. 193, p. 110 653, 2023, ISSN: 0969-8043. [DOI: 10.1016/j.apradiso.2023.110653](https://doi.org/10.1016/j.apradiso.2023.110653).
- 6 R. Rossini, D. Di Martino, T. Agoro, *et al.*, “A new multidisciplinary non-destructive protocol for the analysis of stony meteorites: Gamma spectroscopy, neutron and muon techniques supported by raman microscopy and sem-eds,” *J. Anal. At. Spectrom.*, vol. 38, pp. 293–302, 2 2023. [DOI: 10.1039/D2JA00263A](https://doi.org/10.1039/D2JA00263A).
- 7 M. Musa, R. Rossini, D. Di Martino, M. Riccardi, M. Clemenza, and G. Gorini, “Combining micro-raman spectroscopy and scanning electron microscopy mapping: A stony meteorite study,” *Materials*, vol. 14, no. 24, 2021, ISSN: 1996-1944. [DOI: 10.3390/ma14247585](https://doi.org/10.3390/ma14247585).