

PERSONAL INFORMATION **Francesco Crescimbeni**

EDUCATION

- March 2024 - ongoing **SSAS Ph.D. Student in Physics**
Scuola Superiore di Studi Avanzati, Sapienza University of Rome.
- Nov. 2023 - ongoing **Ph.D. Student in Physics**
Scuola Dottorale "Vito Volterra", Sapienza University of Rome. Thematics: General Relativity, Gravitational Waves, Fundamental Physics.
- Sept. 2021 - Sept. 2023 **Master's Degree in Theoretical Physics**
Sapienza University of Rome. Thesis title: *Measuring distance and inclination of precessing compact binaries with gravitational waves*. Advisor: Prof. Francesco Pannarale, Co-Advisor: Prof. Paolo Pani. Final mark: *110 cum laude / 110*
- Sept. 2018 - Sept. 2021 **Bachelor's Degree**
Physics, Sapienza University of Rome. Thesis title: *Irraggiamento di una carica puntiforme in moto*. Advisor: Prof. Leonardo Gualtieri. Final mark: *110 cum laude / 110*
- 2013 - 2018 **High School**
Liceo Scientifico Statale Plinio Seniore, Rome. Final mark: *93/100*

SCHOLARSHIPS AND ACADEMIC GRANTS

- June 2025 - ongoing **Ermenegildo Zegna Scholarship**
Winner of a merit-based scholarship aimed for an exchange at Birmingham University for two months. Import: 2.5k euros. Website: <https://www.fondazionezegna.org/scholarship/>
- Oct 2024 - ongoing **Avvio alla Ricerca Tipo 1 "GravitySubSolar"**
Principal Investigator of a merit-based grant for Sapienza Ph.D. students. Import: 1k euros. Protocol number: AR12419073C0A82B.
- Nov. 2023 - Nov. 2026 **INFN Ph.D. Grant**
Sapienza University of Rome, As part of the Ph.D. competition.
- March 2023 - Oct. 2023 **Excellence Programme of Master's Degree in Physics, Sapienza University of Rome**
A merit-based competition for the best students of the academic year 2021-2022, which gives the possibility to follow extra-curricular activities, in particular on a course on *Gravitational Wave Searches*, and a summer school on *Gravitational Waves from Neutron Stars* in Aussois, France (<https://indico.in2p3.fr/event/28236/>).

TEACHING ACTIVITIES

- Oct. 2025 - present **Tutorship Grant (Sapienza University of Rome), Bando 15/25**
Winner of a merit-based competition which consists of a tutorship and assistance for the *Analysis I* course held in the first year of the Bachelor's degree in Physics. This activity consisted of preparing and solving exercises in front of the students and being available for questions during the exams.

Mar.- Dec. 2025 Tutorship Grant (Sapienza University of Rome), Bando 12/24

Winner of a merit-based competition which consists of a tutorship and assistance for the *Integral Calculation* course held in the first year of the Bachelor's degree in Informatics. This activity consisted of preparing and solving exercises in front of the students and being available for questions during the exams.

Sept.-Oct. 2024 SSAS tutorship

Tutorship SSAS bachelor students (as part of being SSAS Ph.D. student). The activity consisted of a supervision of the envelop of a project that involved the students. The project consisted on a theme that touched the four academic schools inside SSAS (Literature, Life Sciences, Technological Sciences, and Political Sciences).

Feb. 2023 - Oct. 2023 Tutorship Grant (Sapienza University of Rome), Bando 33/2022

Winner of a merit-based competition which consists of a tutorship and assistance for the *Fisica* course held in the first year of the Bachelor's degree in Biological Science. This activity consisted of preparing and solving exercises in front of the students and being available for questions during the exams.

Nov. 2022 - Oct. 2023 Collaboration Grant (Sapienza University of Rome), Bando 23/2022

Winner of a merit-based competition which consists of a tutorship and assistance of different courses of the Bachelor's degree in Physics and Astrophysics. Coordinator: Prof. Cesare Bini. This activity also included lectures for foreign students (Erasmus Mundus and LaScala), which provided an outlook on different physics topics, including analytical, statistical mechanics, and nuclear physics.

RESEARCH COLLABORATIONS

- April 2024-ongoing Member of the LISA Consortium.
- Nov. 2023-ongoing Member of the Einstein Telescope Collaboration.
- Nov. 2023-ongoing INFN associate.

VISITING RESEARCHS

- Oct-Dec 2025 Visiting scholar at Birmingham University, under Gregorio Carullo's group.
- March-May 2025 Visiting scholar at Johns Hopkins University, under Emanuele Berti's group.
- Nov.-Dec. 2024 Visiting scholar at University of Geneve, under Antonio Riotto's group.

CONFERENCE TALKS AND POSTERS

- 8th-12 Sept. 2025 SIGRAV25: University of Milano-Bicocca, Milan. **-With talk.-**
- 14th-19 July 2025 GR24/Amaldi16. Loc.: Scottish Exhibition Center, Glasgow. **-With talk and poster.-**
- 26th-30 May 2025 Einstein Telescope Symposium. Loc.: CNR, Bologna. **-With talk.-**
- 23th-25 Oct. 2024 GRASP. Loc.: Università di Pisa, Pisa. **-With talk as invited speaker.-**
- 14th-18 Oct. 2024 Challenges and future perspectives in gravitational-wave astronomy: O4 and beyond. **-With talk.-** Loc.: Lorentz Institute, Leiden.
- 16th-20 Sep. 2024 TEONGRAV Workshop. **-With talk.-** Loc.: Sapienza, Rome.
- 26th-30 Aug. 2024 Black Holes Inside and Out. **-With poster.-** Loc.: Black Diamond, Copenhagen.
- 22th-24 Aug. 2024 Ringdown Inside and Out. **-With talk.-** Loc.: Danish Architecture Center, Copenhagen.
- 1st-6 July 2024 PSI school & workshop. **-With poster.-** Loc.: Istituto Superior Tecnico, Lisbon.
- 6th-10 May 2024 Einstein Telescope Symposium **-With talk.-** (Online)
- 23th-25 April 2024 Cosmic Explorer Symposium **-With talk.-** (Online)
- 4th-9th June 2023 Thematic school GWsNS-2023: Gravitational Waves from Neutron Stars. **-With poster.-** Loc.: CNRS, Aussois.

PUBLICATIONS AND PREPRINTS

- 2025 E. Berti, **F. Crescimbeni**, G. Franciolini, S. Mastrogiovanni, P. Pani, G. Pierra, "Inferring black hole formation channels in GWTC-4.0 via parametric mass-spin correlations derived from first principles", arXiv:2512.03152.
- 2025 **F. Crescimbeni**, G. Carullo, E. Berti, G. Caneva Santoro, M. H.-Y. Cheung, "Accuracy of ring-down models calibrated to numerical relativity simulations", arXiv:2511.02915.
- 2025 **F. Crescimbeni**, X. Jimenez Forteza, P. Pani, "Black Hole Ringdown Amplitudes", arXiv:2510.11782.
- 2025 A. Frattale Mascioli, **F. Crescimbeni**, C. Pacilio, P. Pani, F. Pannarale, "Taming systematics in distance and inclination measurements with gravitational waves: role of the detector network and higher-order modes", *Phys. Rev. D* 112 (2025) 062003.
- 2025 The Einstein Telescope Collaboration, "The Science of Einstein Telescope", arXiv:2504.12473.
- 2025 **F. Crescimbeni**, V. Desjacques, G. Franciolini, A. Iannicari, A. J. Iovino, G. Perna, D. Perrone, A. Riotto, H. Veermäe, "The Irrelevance of Primordial Black Hole Clustering in the LVK mass range", *JCAP* 05 (2025) 001.
- 2024 **F. Crescimbeni**, G. Franciolini, P. Pani, M. Vaglio, "Cosmology and nuclear physics implications of a subsolar gravitational-wave event", *Phys. Rev. D* 111 (2025) 083538.
- 2024 **F. Crescimbeni**, X. Jimenez Forteza, S. Bhagwat, J. Westerweck, P. Pani, "Theory-agnostic searches for non-gravitational modes in black-hole ringdown", arXiv:2408.08956, *under review on PRD*.
- 2024 **F. Crescimbeni**, G. Franciolini, P. Pani, A. Riotto, "Can we identify primordial black holes? Tidal tests for subsolar-mass gravitational-wave observations", *Phys. Rev. D* 109 (2024) 124063.

PROCEEDINGS

- 2025 **F. Crescimbeni**, "Can we identify primordial black holes? The role of subsolar gravitational-wave events", arXiv:2511.01051, *GR24/Amaldi16 proceedings*.
- 2025 **F. Crescimbeni**, "Theory-agnostic searches for non-gravitational modes in black-hole ring-down", arXiv:2510.23774, *GR24/Amaldi16 proceedings*.

LANGUAGES

Italian	Mother Tongue
English	B2 level (First Certificate, obtained on 26th January 2024)

COMPUTER SKILLS

Basic knowledge	R, Matlab
Intermediate knowledge	ROOT
Advanced knowledge	Python, Latex, Mathematica, C, C++, Office Packages

EXTRA ACTIVITIES

- 2018 - ongoing **Theatrical Activity**, Tribalta Teatro, Rome. Active Member of the Tribalta Teatro association, which organizes theater plays in the summer.
- 2017 **BMUN Delegate**, San Francisco, USA. Delegate for the Berkeley Model United Network (NY-MUN) event held in San Francisco in March.
- 2017 **IMUN Delegate**, Rome, Italy. Delegate for the Italian Model United Network (IMUN) event held in Rome in January.
- 2016 **NYSMUN Delegate**, New York, USA. Delegate for the New York Model United Network (NY-MUN) event held in New York in March.
- 2016 **IMUN Delegate**, Rome, Italy. Delegate for the Italian Model United Network (IMUN) event held in Rome in January.

F.to Francesco Crescimbeni