

DOCTORAL PROGRAMME IN PHYSICS AND ASTRONOMY

Director Prof. Francesca Intonti

XLII cycle – academic year 2026/2027

SCIENTIFIC AREA	
ADMINISTRATIVE OFFICE	Department of Physics and Astronomy
PARTNER INSTITUTIONS	Istituto Nazionale di Fisica Nucleare (INFN)
WEB	www.fisica.unifi.it/dottorato
<p>POSITIONS AVAILABLE: 28 Positions with Scholarship: 26 Positions without Scholarship: 2* * standard ranking only</p>	
RANKING LIST FOR STANDARD POSITIONS SCHOLARSHIPS AVAILABLE: 8	<p>5 - University of Florence 3 - Istituto Nazionale di Fisica Nucleare (INFN)</p>
RANKING LISTS FOR POSITIONS WITH SPECIFIC RESEARCH TOPICS SCHOLARSHIPS AVAILABLE: 11	<p>1 - Istituto Nazionale di Fisica Nucleare (INFN) Thematic: “Integrating high-resolution online data and low-resolution offline data for improved aerosol source apportionment studies”</p> <p>4 - Istituto Nazionale di Astrofisica - Osservatorio Astrofisico di Arcetri (INAF-OAA) Thematic 1: “Understanding the formation mechanism of lithium rich stars using spectroscopy and photometry” Thematic 2: “Discovery of exotic stellar populations and interacting binaries with large astronomical surveys and databases” Thematic 3: “Scientific and Technical Preparation for ANDES at the ELT. Spectroscopy of Galaxies and the IGM or Adaptive Optics Optimization” Thematic 4: “Theoretical, Observational Astrophysics and related Instrumentation and Technology”</p> <p>2 - Department of Chemistry “Ugo Schiff” Thematic 1: “Topological states in carbon nanostructures”</p>

	<p>Thematic 2: “Quantum coherence and optical and magnetic states in carbon nanostructures” Funded by the FIS3_2024_BOGANI project</p> <p>2 - Department of Physics and Astronomy</p> <p>Thematic: “Production of YbCr molecules from ultracold atomic mixtures for research into new physics” Funded by the ERC-2025-STG project “An ultracold Molecule Platform for fundamental Asymmetry Searches” (COMPASS) – Grant Agreement No. 101220504</p> <p>1 - Department of Physics and Astronomy</p> <p>Thematic: “Theoretical and observational study of solar wind transient structures in support of interplanetary missions” Funded by the ESA project “HEliospheric pioNeer for sOLar and interplanetary threats defeNce” (HENON)</p> <p>1 - Department of Physics and Astronomy</p> <p>Thematic: “MHD simulations of cosmic ray propagation and feedback in the interstellar medium” Funded by the FIS3_2024_ARMILLOTTA project</p>
<p>RANKING LISTS FOR POSITIONS WITH SPECIFIC RESEARCH TOPICS SCHOLARSHIPS AVAILABLE: 6</p> <p><i>(subject to the grant of funding)</i></p>	<p>Agenzia Spaziale Italiana – ASI</p> <p>Call for funding of 45 scholarships on topics of interest to ASI</p> <p>Thematic 1: “Development of an optical payload for Earth-to-space quantum and classical communication using high-dimensional photonic states (qudits) and integrated photonics”</p> <p>Thematic 2: “From atmospheric-entry plasma to geochemical reactors: experimental simulation and statistical-physics modeling of exogenous organic matter in Mars-relevant environments”</p> <p>Thematic 3: “Bio-hybrid Space Photonics: Quantum modeling of photosynthetic antenna complexes for the lunar Habitat”</p> <p>Thematic 4: “Low-energy data analysis of the GAPS experiment and constraints on cosmic ray propagation models in the heliosphere”</p> <p>Thematic 5: “Cavity QED based quantum networks of atomic clocks for space applications”</p> <p>Thematic 6: “Development of a detector for radiation monitoring in space environments and validation through nuclear cross-section measurements”</p> <p>Please note: scholarships will be awarded ONLY if the respective funding will be granted</p>
<p>RANKING LISTS FOR POSITIONS WITH SPECIFIC RESEARCH TOPICS</p>	<p>Agenzia per la Cybersicurezza Nazionale – ACN</p> <p>Call for funding of 30 scholarships in cybersecurity</p>

<p>SCHOLARSHIP AVAILABLE: 1</p> <p><i>(subject to the grant of funding)</i></p>	<p>Thematic: “Development and implementation of an Eavesdropper for security assessment in quantum key distribution protocols”</p> <p>Please note: scholarship will be awarded ONLY if the respective funding will be granted</p>
<p>Further information on cybersicurezza Call</p>	<p>The procedures for the management, implementation, reporting, and funding of the scholarship are governed by the “Disciplinare”, with particular reference to the following articles:</p> <p>Article 4 (Obligations of the PhD student recipient)</p> <ol style="list-style-type: none"> 1. The PhD student recipient of the scholarship funded by the Agency must carry out the research project in line with what is indicated in the Research Project Fact Sheet approved for the funding. 2. The PhD student recipient of the scholarship funded by the Agency must comply with the obligations related to intellectual property aspects as outlined in the following Article 5. <p>Article 5 (Intellectual property and research results)</p> <ol style="list-style-type: none"> 1. Universities may not use, for advertising purposes or any other promotional activity, the name, trademark, or other distinctive sign of the Agency except to disclose the funding of the PhD scholarships. 2. Without prejudice to the moral right of authorship of the PhD students, the ownership of the research results of the projects funded by the Agency will be shared equally (50%) between the Agency and the University. Consequently, the University will promptly inform the Agency – via Certified Electronic Mail (PEC) to the address acn@pec.acn.gov.it – of the existence of research results so that the Agency, within the following sixty days, may express its possible intention to waive its right via Certified Electronic Mail (PEC) to the address acn@pec.acn.gov.it. In such a case, the University will acquire full ownership of the research results. <p>Article 9 (Revocations, non-allocation of scholarships, withdrawals, terminations, and cessations)</p> <ol style="list-style-type: none"> 1. The Agency will proceed with the total revocation of the funding, with the consequent obligation for the University to return any amounts already disbursed, in the following cases: a) failure to start the doctoral program in the XLI doctoral cycle within the established deadlines; b) interruption of the courses due to reasons attributable to the University itself; c) failure to comply with the obligations incumbent on the University as outlined in the Call and the Implementation Regulations; d) implementation of the research project in a manner different from that approved for funding. 2. In the case of the PhD student recipient failing to obtain the doctoral degree, or if the PhD student recipient is not positively evaluated for the renewal of the scholarship, or if they renounce it, partial revocation of the funding will occur, with the obligation to return the amounts disbursed following the last annual report submitted by the University to the Agency. Amounts not yet disbursed will be considered not due, and payments will be interrupted. 3. The University will notify the Agency of any withdrawals by the PhD student, whether regarding the position or the scholarship, even if related to a portion of the course.
<p>STUDY/RESEARCH PERIODS ABROAD</p>	<p>at least 3 months at least 6 months – scholarships Agenzia Spaziale Italiana and Agenzia per la Cybersicurezza Nazionale</p>
<p>DOCUMENTS REQUIRED FOR THE ADMISSION</p>	<ul style="list-style-type: none"> ● Copy of the Identification Document

	<ul style="list-style-type: none"> ● Self-certification for qualifications obtained in Italy (laurea triennale, specialistica o magistrale o ciclo unico) with list of exams taken, credits and related grade, title of the thesis and graduation mark (using this template or similar forms containing the required information) ● Qualifications obtained abroad (Bachelor's and Master's Degrees or combined cycle Degree) with a list of all exams taken, credits and related grade, rating scale, title of the thesis and graduation mark <p><i>The same documentation except for the final mark must be submitted by those who will graduate within the 31/10/2026</i></p>															
<p>DOCUMENTS REQUIRED FOR THE EVALUATION</p>	<p>MANDATORY</p> <ul style="list-style-type: none"> ● Curriculum vitae et studiorum (maximum 2 pages, A4) ● Research project (maximum 2 A4 pages) <p>OPTIONAL</p> <ul style="list-style-type: none"> ● List of publications ● Thesis abstract ● Other qualification documents ● up to two letters of reference 															
<p>RESEARCH PROJECT</p>	<p>The project may be written in Italian or English and must outline a possible research activity to be carried out within one of the research groups in the Department of Physics and Astronomy or in the linked Research Centers. The candidate may present the same project for the standard scholarship and for any scholarship with specific research topic and separate ranking lists he/she intends to apply to, or alternatively may present different projects for each scholarship, indicating clearly to which scholarship each project refers.</p>															
<p>INTERVIEW MODE</p>	<p>Remotely (videocall)</p>															
<p>FURTHER INFORMATION</p>	<p>The interview is conducted in English language. The interview will concern the research project, the master's thesis, the CV and the publications. Questions may be asked concerning the basic physics knowledge related to the project, to the thesis, and to the publications.</p>															
<p>EVALUATION MARKS</p>	<table border="1" data-bbox="501 1487 1417 1877"> <thead> <tr> <th>parameter</th> <th>minimum score</th> <th>maximum score</th> </tr> </thead> <tbody> <tr> <td>Research project, other titles, publications, curriculum vitae et studiorum, and list of taken exams with accompanying grades</td> <td>30/120</td> <td>45/120</td> </tr> <tr> <td colspan="3">Applicants who obtain a mark of at least 30/120 will be admitted to the interview</td> </tr> <tr> <td>Interview: discussion of the research project, thesis, other titles, publications.</td> <td>50/120</td> <td>75/120</td> </tr> <tr> <td colspan="3">Eligibility is achieved with a minimum score of 80/120</td> </tr> </tbody> </table>	parameter	minimum score	maximum score	Research project, other titles, publications, curriculum vitae et studiorum, and list of taken exams with accompanying grades	30/120	45/120	Applicants who obtain a mark of at least 30/120 will be admitted to the interview			Interview: discussion of the research project, thesis, other titles, publications.	50/120	75/120	Eligibility is achieved with a minimum score of 80/120		
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EXAMINATION SCHEDULE		
	DATE	TIME
INTERVIEW	July 13 th 2026	09:30 a.m.
The list of the candidates admitted to the interview and the final ranking will be published at the page PhD courses		

ENROLLMENT ROUNDS		
<p>Enrollment must be completed within the specified mandatory deadlines, under penalty of exclusion (as per Art. 12 of the Call for Applications - Annex 1)</p>		
	Opening Date	Deadline for Enrollment
Enrollment (successful candidates)	Ranking's publication date (by July 31, 2026)	by 11.59 pm (CEST) on August 25th 2026 *
1st round (eligible candidates)	from 31st August 2026	by 11.59 pm (CEST) on September 7th 2026
2nd round (eligible candidates)	from 10th September 2026	by 11.59 pm (CEST) on September 17th 2026
<p><i>* Please note that the University will be closed from August 8th to August 23th, 2026.</i></p>		
<p>Subsequent reassignment of vacant positions: The reassignment of any residual positions after the first two rounds will be activated on every Tuesday until October 27th, with a mandatory enrollment deadline set for the following Friday (11:59 PM CEST). It is the sole responsibility of the candidate to check their personal reserved area</p> <p>No personal communications will be sent to candidates. Technical instructions for enrollment can be found here</p>		