

**SISSA**Scuola  
Internazionale  
Superiore di  
Studi Avanzati**Selection for the conferment of a fellowship funded by the “ERC Synergy”  
project “Making Sense of the Unexpected in the Gravitational-Wave Sky”  
(GWSky)****PhD course in Astroparticle Physics****• Requirements:**

SISSA welcomes applications from candidates with a strong interest in research, without limitations of age and nationality, who have completed, or are going to complete by 31<sup>st</sup> October 2024, their undergraduate studies of Master of Science/ Laurea Magistrale, in scientific subjects, with particular emphasis to the following fields:

- **Gravitational Waves**
- **Machine learning**
- **Astrophysics of Massive Black Holes**

**• Fellowships and other benefits:**

**The School awards a fellowship for a maximum of 4 years the amount of which is, at the moment, € 16.242,96 gross per year (about 12% tax).**

Admitted students will be granted a one-time settlement allowance of € 500.00 if they are domiciled in a country belonging to the European Union, and € 1,000.00 if they are domiciled in non-European countries.

- A contribution towards living expenses of the amount of €150,00 gross per month will be awarded to those who will subscribe a registered rent contract in the Trieste province.
- A “laptop contribution” up to € 400,00 may be granted upon request and presentation of the relevant invoice.
- Students enrolled in the third/fourth year can request a contribution of up to € 1.000,00 for their access to training and/or to create a network of academic contacts to help them in their future career.
- Non-EU students and EU students who are unable to extend their health coverage in Italy will be reimbursed for the costs incurred for the subscription of a private or public health insurance up to a maximum of €700.00 per year.
- The contributions foreseen in the event of suspension due to illness, maternity/paternity and parental leave are regulated by art. 15 of the SISSA PhD Course Regulations.

**• Online application:**

An online application must be filled and sent using the procedure available at the page <https://pica.cineca.it/sissa/> by **13.00 hrs of 4<sup>th</sup> March 2025 (Italian time)**  
Candidates should upload the following documents in pdf format:

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**Segreteria Didattica ed  
Allievi**Via Bonomea, 265  
34136 Trieste – Italy  
T +39 0403787111  
E [phd@sisa.it](mailto:phd@sisa.it)  
[sisa.it](http://sisa.it)

- *curriculum vitae*;
- a certificate of University examinations taken (with marks);
- a final degree certificate;
- If, at the time of application, candidates should not be yet in possession of a degree certificate, they can submit it at the time of the examination. European Union candidates can submit a personal declaration instead of the aforementioned certificates.
- a copy of the diploma thesis (if any), or its abstract.

**At the end of the application, the candidate must print and sign the request for admission to the exams and send it using the procedure above.**

Subsequently, the names and institutional email addresses of up to two referees may also be indicated; they will receive a message requesting to upload a letter of recommendation on the same platform. **This procedure must be completed no later than two days after the closing date of the announcement of the chosen course.**

Candidates with disabilities certified according to the law n. 104/1992 and subsequent modifications, and those diagnosed with Specific Learning Disorder certified according to the law n. 170/2010 and to the D.M. n. 5669 dated 12/07/2011, can report their needs together with the submission of the admission application, within the deadline set by this announcement.

#### ● **Selection Procedure:**

After the deadline of the announcement, the Selection Committee, will evaluate the documentation produced by the candidates (*curriculum vitae*, transcripts, letters of recommendation, etc.). Candidates who have obtained a minimum score of 21/30 will be invited to take part in the interview which will be held remotely between 24 and 27 March 2025.

#### **Interview by videoconference**

The candidate must be available on the day and at the time that will be notified by the Commission via e-mail.

For identification purposes, and under penalty of exclusion from the selection process, each candidate is required to identify themselves showing the same identity document already uploaded as an attachment to the application before the interview begins.

In the case of a written exam, each candidate must provide two cameras; one that allows the vision of the candidate himself (i.e. computer / laptop) and one that frames the screen where the candidate takes the test (i.e. mobile phone).

Failure to give personal address, lack of internet connection, unavailability of the candidate at the expected day/time, or failure to show a valid identification document, shall be reason for exclusion from the selection process.

SISSA accepts no responsibility in the event that technical reasons should prevent the proper conduct of the oral examination.

- **Admission:**

Candidates admitted to the School will be notified by email and will be asked to be present at the School by **1 October, 2025**.

**Failure to do so without a valid reason will result in the loss of the place and fellowship awarded.**

**In order to be enrolled and to be awarded the fellowship, admitted candidates must pay a “Regional Tax” of the amount of € 120,00 - € 160,00 per year. Information can be retrieved at <http://www.aridis.fvg.it/>**

As per Legislative Decree 30.06.03 n.196, and of the European Regulation 2016/679 (General Data Protection Regulation) all data given to this Administration will be processed only for purposes related to and instrumental to the present procedure, in compliance with the provisions in force.

The Director  
Prof. Andrea Romanino  
(digitally signed)

## **Selection for the conferment of ERC Funded Fellowship on Hydrogen-bond Networks as Optical Probes (HyBOP)**

**Project:** This is a highly interdisciplinary and ambitious project at the boundary between physics, chemistry and biology funded by an ERC grant and hosted at the International Center of Theoretical Physics (ICTP) that seeks to unravel the origins of luminescence in organic materials. The project aims to advance existing notions of our textbook understanding of the mechanism by which biological materials glow, with special focus on the role of water. This will be achieved with the help of advanced simulation techniques and modern tools of data science and machine-learning. The project will involve high-level international collaborations with leading experimentalists in the field as well as theoreticians from SISSA. The long-term vision is to design an entirely new class of luminescent probes for use in medical diagnostics.

**Research Fields:** Physics, Chemical-Physics, Data-Science, Bio-luminescence, Machine-Learning, Electronic Structure

**Qualification required:** University degree (Master of Science/ Laurea Magistrale or Specialistica) in Physics, Chemistry, Engineering.

**Amount of the fellowship:** € 1.400,00 net per month (such amount includes a contribution towards rent expenses and does not foresee social security coverage – see announcement)

**Deadline for online submission of applications:** **6<sup>th</sup> September 2022**  
**(13.00 hrs – Italian Time)**

**Admission:** **Academic and scientific qualifications + written test oral exam**

Candidates who have obtained a minimum score of 7/10 on academic and scientific qualifications will be invited to take the written test via zoom on 12th September 2022. Those who will obtain a minimum mark of 28/40 in the written test, will be admitted to the interview which will be held on 13th September 2022 via zoom, with scheduled times that will be communicated later on.

Results of all evaluations will be notified by email.