

The Gran Sasso Science Institute (GSSI) offers positions for research activity in the following fields of the Institute: Physics, Mathematics, Computer Science.

Applicants must hold a PhD degree or an equivalent qualification. The PhD title should be earned before starting the appointment.

1. Physics

1.1 One position funded through the CUIIM Project for the following profile: *“Research work on the origin of the cosmic radiation, both in terms of particle acceleration and transport. Expertise in the use of semi-analytic techniques and/or numerical simulations is required”*.
Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months.

1.2 One position funded through the CUIIM Project for the following profile: *“Data analysis and numerical simulation techniques for the study of high energy cosmic rays with space-based detectors”*.

Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months.

1.3 One position for the “NGS – New Generation Satellites” Project for the following profile: *“Development of new technologies for the study of the cosmic radiation with satellite-borne detectors and prototype testing”*.

Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months.

1.4 One position for the PRIN Project *“The new frontier of Multi-Messenger Astrophysics: follow-up of electromagnetic transient counterparts of gravitational wave sources”* for the following profile: *“Observations, data analysis and/or modeling of electromagnetic and/or gravitational-wave signals emitted by astrophysical transients”*.

Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months, and can be extended if needed, subject to funding availability.

1.5 One position for the EGO Project for the following profile: *“One post-doctoral position on instrument science in gravitational-wave detection partially financed by the European Gravitational Observatory (EGO) for the implementation of a seismic gravity-noise cancellation system. Additional activities in instrument science are encouraged including detector calibration, detector control with machine-learning techniques, or environmental-noise mitigation for Advanced Virgo plus and next-generation detectors”*.

Annual gross salary: € 45.000,00 gross amount before taxes, including taxes owed by GSSI.

The duration of the appointment is 24 months.

1.6 One position for the PRIN Project “Characterization of the Sos Enattos mine in Sardinia as the site for the Einstein Telescope GW observatory” for the following profile: *“The postdoc is expected to work on gravitational-wave data analysis or instrument-science problems of current or future gravitational-wave detectors”*.

Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months, and can be extended if needed, subject to funding availability.

2. Mathematics

1.1 One position funded through the CUIIM Project for the following profile: “*Mathematical modelling in physical and life sciences, theory (deterministic and stochastic), numerics and applications*”.

Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months.

1.2 Two positions on the following themes: “Numerical methods for Partial differential equations and Dynamical systems, Numerical linear algebra, Mathematical models in Fluid dynamics and Biology, models of collective behavior, dynamics on networks. Stochastic differential equations, stochastic methods in statistical mechanics, hydrodynamic limits. Computational methods in seismology with experience in HPC. Mathematical methods for quantum computing, mathematics in quantum cryptography”.

Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months.

3. Computer Science

1.1 One position funded through the CUIIM Project. We welcome applications from researchers working on themes that are strongly connected to at least one of the following pillars:

- Algorithms: Graph and network algorithms, combinatorial optimization, approximation algorithms, algorithmic game theory, computational social choice, multi-agent systems, analysis of complex networks, distributed computing, and algorithm engineering.
- Software engineering: Methods and tools for software development, analysis, maintenance, and evolution. Model-driven engineering and Software Quality. Software architectures and architectural modeling languages. Dynamic adaptation applied to multiple domains, e.g., CPS and IoT.
- Formal methods for reactive and concurrent systems: Models and languages for the rigorous description of reactive systems. Concurrency theory. Formal methods for (software) verification (including logics, model checking, type systems, probabilistic and stochastic methods, performance analysis) and their embodiment in software tools.

Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months.

1.2 One position on the PRIN Project "Designing Spatially Distributed Cyber-Physical Systems under Uncertainty (SEDUCE)" for the following profile: “The successful candidate will develop model-based techniques for modelling and analyzing spatially distributed cyber-physical systems subject to uncertainties. The research activities will involve the development of a component-based modelling language for the specification of spatio-temporal requirements, space and uncertainty of stochastic hybrid systems. The postdoc will also devise techniques to transform design models into spatio-temporal logic and differential equations to automate the analysis”.

Annual gross salary: € 36.000,00.

The duration of the appointment is 24 months, and can be extended if needed, subject to funding availability.

A very good knowledge of English is required.

The applications must be sent to GSSI only by filling out the online application form at <https://applications.gssi.it/postdoc/>

Deadline: July 23 2020, 5 p.m. (italian time zone).

The application must include:

- a curriculum vitae, including the complete list of publications;
- a research statement;
- up to three selected publications which will be evaluated individually. The PhD thesis can be included, because it is considered as publication;
- a valid id document.

The candidate can also suggest the names of up to two external referees, that will be contacted by GSSI for the submission of a reference letter.

Candidates willing to apply to more than one position (e.g. 1.2 and 1.3) should go through the application procedure for each position separately.

The full call for applications is available at <https://applications.gssi.it/postdoc/>

For additional information please contact applications@gssi.

L'Aquila, June 23 2020