



Call for 3 Early Stage Researcher fellowships at INFN (Istituto Nazionale di Fisica Nucleare), including the enrolment in the PhD in Astroparticle Physics at GSSI (Gran Sasso Science Institute) in L'Aquila, Italy, funded by the GraWIToN project (Marie Curie ITN).

ACADEMIC YEAR - 2014-2015

Art. 1

(Available Positions and Research Projects)

1. Istituto Nazionale di Fisica Nucleare (INFN) announces 3 Early Stage Researcher (ESR)¹ fellowships within the project “GraWIToN – Gravitational Wave Initial Training Network” - European Marie Curie Action ITN (Initial Training Network).

The ESR will be inserted in the doctorate programme of the Gran Sasso Science Institute in L'Aquila, Italy. The selection procedure will be held on the basis of candidates' qualifications and interview.

2. The Gran Sasso Science Institute (GSSI) is an international PhD school and a center for research and higher education, framed in the INFN organizational structure as a National Centre for Advanced Studies.

The PhD degree in Astroparticle Physics is released by the International School for Advanced Studies (SISSA) of Trieste.

INFN is the Italian Institute for research in the field of particle, nuclear and astroparticle physics.

3. Initial Training Networks (ITN) is one of the Marie Curie Actions. It aims to improve career perspectives of ESR in both public and private sectors. This will be achieved through a trans-national networking mechanism, aimed at structuring the existing high-quality initial research training capacity throughout Member States and associated countries. Direct or indirect involvement of organizations from different sectors, including (lead-) participation by private enterprises in appropriate fields, is considered essential in the action. In particular, the action aims to add to the employability of the recruited researchers through exposure to both academia and enterprise, thus extending the traditional academic research training setting and eliminating cultural and other barriers to mobility.

4. GraWIToN is an Initial Training Network, funded by European Commission under FP7-Marie Curie Actions for four years, since the 1st of February 2014. GraWIToN Project aims to train 13 young researchers (PhD students) in the gravitational wave search field. This research field is in an impressive expansion period, in fact a new generation (2G) of detector is under installation and commissioning in these years. Advanced Virgo and Advanced LIGO promise the exciting discovery, in few years, of the first gravitational waves signal, predicted

¹ From now on: ESR – Early Stage Researcher

by the Albert Einstein General Relativity. The young researchers will be embedded in this exciting research environment and will be trained in the cutting edge technologies adopted in the Gravitational Wave detectors. The project links both academic and industrial partners offering experience in both environments and excellent opportunities for advancement. The network also includes an extensive training programme consisting of schools, research activities and secondments in the labs of the participating partners. Besides INFN and GSSI, project partners are EGO (European Gravitational Observatory), Laser Zentrum Hannover (Germany), Max Planck Gesellschaft (Germany), Gooch & Housego (UK), University of Birmingham (UK), University of Glasgow (UK), Boostec (France), Università di Pisa (Italy). Furthermore, Associated Partners are Leibniz Universität Hannover (Germany), TRII (Italy), neoLASE (Germany), Ecole Nationale d'Ingénieurs de Tarbes (France).

5. The individual research projects will specifically focus on one the following research topics:

- Simulations on gw detectors: Thermal effects / Time domain simulation (ESR n.7)
- Data Analysis: Continuous Wave/Transient (ESR n.11)
- Data Analysis: Multi-Messenger/workflow (ESR n.12)

The project ESR n.7 forms part of the “Simulation” (SIM) sub programme, the projects ESR n.11 and n.12 form part of the “Data Analysis” (DAS) sub programme of the EU funded program GraWIToN.

For further information on the specific programme and activities, applicants can visit the web site: <http://www.grawiton-gw.eu/>.

6. The ESR will be trained for a period of 36 months and absorbed by an international network research programme specifically related to the experimental and technological aspects of the Gravitational Wave Detectors, although, for a better completeness of the training, a solid competence on data analysis methods and astrophysics will be transferred to him/her. ESR will be fully integrated with the research activities managed by a network that links several European universities and research centres that actively contribute to the gravitational wave community. The Advanced Virgo and GEO600 experiments and the Einstein Telescope project are composing the unique framework where the GraWIToN ESR will be fully immersed.

7. The ESR will be inserted in research groups composed by several experts. The development of complementary skills, composed by three major components - complementary technologies, project management, outreach and dissemination of scientific results, is a mandatory component of the training of the ESR.

8. Two levels of training are provided by GraWIToN project: local and network training. At local level, in the first year, ESR will be associated to theoretical training provided through local courses and seminars organized within the PhD programme at GSSI in L'Aquila. Moreover, the ESR will have to participate to few periods of lessons hosted by some of the GraWIToN participants (in Italy and abroad). An additional part of network training is also organised on event basis: Summer Courses focused on theoretical training, thematic Conference and Meetings, collaboration meetings, informal workshops.

At the end of the first year, ESR will be seconded in the laboratory of an INFN group participating to the GraWIToN network: Rome Tor Vergata for ESR n.7 “Thermal effects”; Firenze for ESR n.7 “Time domain simulation”; Roma La Sapienza for ESR n.11 “Continuous Wave”; Trento TIFPA for ESR n.11 “Transient”; Firenze for ESR n.12 “Multi-Messenger”; Genova for ESR n.12 “Workflow”.

Art. 2

(Participation Requirements)

1. Applicants may be of any nationality.

2. They are normally expected to have achieved a **Master of Science (M.Sc.) Degree** or equivalent title in Physics or Computer Science.

3. At the time of recruitment applicants must have not been awarded a doctorate degree and be in the first 4 years (full-time equivalent) of their research career.
4. At the date of recruitment, applicants must not have resided or carried out their main activity (work, studies, etc.) in Italy for more than 12 months in the 3 years immediately prior to their recruitment. Compulsory national service and/or short stays such as holidays are not taken into account.
5. Candidates should be able to work effectively in team, within an international environment, and they have to be available to travel. They should have excellent organizational, reporting and communication skills, as well as a proactive attitude towards solving problems. A very good English level is essential.

Art. 3 (Application Process and Attachments)

1. The closing date for applications is **10th July, 2014**.
2. Applications have to be submitted to grawiton_jobs@gssi.infn.it. Please make sure to mark in the "Subject" field of your email in capital letters "**Ref. ESR n.x-GraWIToN**", where x is 7, 11 or 12.
3. The application must include:
 - a) Application form duly filled in and signed (see attached form)
 - b) Copy of passport
 - c) Copy of CV/résumé
 - d) Copy of official transcripts (in English or Italian) detailing your university-level qualifications, the list of classes/exams successfully attended/passed and marks to date; final score and date of graduation. This should be produced for you as an official document by the institution where you studied.
 - e) Two or more academic references which support intellectual ability, academic achievement, motivation, ability to work in a group.
 - f) Skype ID for possible remote interview.

Art. 4 (Selection of Applicants)

1. The selection will be based on the evaluation of the submitted documents and on an interview.
2. Applicants that obtain a positive evaluation of documentation will be admitted to the interview.
3. Applicants admitted to the interview will be informed by e-mail about the scheduling of the interview (it may be carried out via video conference).
4. Eligible candidates **will be informed by e-mail** about the results of the competition.
5. The PhD training program will start on November 3rd.

Art. 5 (ESR Obligations)

1. The ESR will have, in the first year, to attend classes at GSSI and perform, in the following years, high quality research under the guidance of the Supervisors provided by the INFN groups participating to the GraWIToN network.
2. He/she will have to participate to the activities of the Network as specified by the Program and/or required by the Project Coordinator and/or Supervisors, including planned secondments at a Project Partners' or an Associated Partners' facilities, involvement in meetings, schools, workshops and in training activities. ESR will participate to these events, while being encouraged to keep an active attitude and present his/her research results by means of talks or posters.

3. The ESR will write up the results of the research activity and present research papers and publications at meetings and conferences, as advised by the Supervisors; he/she will deal with **GraWIToN web site** where he/she will present his/her research and related achievements. The ESR will be asked to develop new material in the form of graphical media, text and interactive tools where applicable to create a project-focused presentation of his/her activities. ESR must be able to use Twitter, Facebook and Google+ to advertise the online presence outside the scientific communities; will design and realize a new **e-Newsletter** where his/her experience will be described for a wide public.
4. The ESR will contact schools in the neighbouring of the hosting institution and organise activities or presentation related to the GraWIToN science, acting as a **Marie Curie ambassador**, promoting the scientific research to the secondary school students and delivering teaching materials.
5. The ESR will widen the personal knowledge in the research area and undertake complementary training and will keep records of the activities, such as secondments, visits, leave of absence.
6. He/she will comply with the internal rules of INFN.
7. At the end of the PhD course ESR will be asked to defend a written dissertation based on his/her research project.

Art. 6 (Salary amount)

1. The ESR will receive a living allowance per year of € 40.508,00 (including income tax and retirement pension contributions) and a total mobility allowance per year from € 8.954,40 up to € 12.792,00 (depending on family status at the date of recruitment). The employment contract will have full social security coverage and is subject to national employment laws and employer costs deduction.
2. ESR will receive lunch tickets in effective working days, according to INFN internal regulations.
3. There will be neither tuition fees nor access costs for laboratories or other facilities.

Art. 7 (Equal opportunities)

The GraWIToN project endeavours to employ a higher portion of female research staff. Female candidates are therefore encouraged to apply and will be chosen if suitably qualified.

Art. 8

The candidate will be selected by an International Committee.

Art. 9 (Treatment of Personal Data)

1. All personal data are processed lawfully and fairly for the management of competition procedures, in accordance with Article 11 of the Legislative Decree 196/2003 (“Code concerning the Protection of Personal Data”). The data – in anonymous form – may also be used for statistical processing purposes.

APPLICATION FORM

SUBJECT: Selection procedure for 3 (three) Early Stage Researchers (ESR) fellowships at the Gran Sasso Science Institute (GSSI) in the framework of the GraWIToN project (Marie Curie ITN)

“Ref. ESR [N] - GraWIToN” (where [N] is 7, 11 or 12).

I, the undersigned, [NAME] [SURNAME], born in [CITY] [COUNTRY], date of birth [DD/MM/YY], resident in [COUNTRY], address [STREET] [NUMBER] [ZIP] [CITY] [COUNTRY],

hereby request to participate in the selection as specified in the subject.

To this purpose I declare that:

1. I have not resided or carried out my main activity in Italy for more than 12 months in the 3 years prior to this recruitment.
2. I have not been awarded a doctoral degree and I am in the first 4 years (full-time equivalent) of my research career.
3. I have no unspent criminal conviction or pending criminal proceedings.

Please contact me at this email address.....

Sincerely

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(Signature)