



CALL for APPLICATIONS
(Determina Direttoriale N. 39 del 15/01/2022)

Public competition, based on qualification and possible interview to award an internship on the subject:

Investigation of Kernel Regression techniques for applications to radial-velocity timeseries obtained with the spectrograph HARPS-N by the GAPS collaboration

The internship within the research project GPAS is not intended to cover specific personnel needs of the Institute or of the project itself, but it offers the opportunity of undertaking research activity within the project to those candidates wishing to acquire knowledge and skills for their professional advancement. Besides, the research internship offers the fellow the opportunity of professional growth by pursuing her/his scientific or technological research activity within a highly qualified environment.

With the aim of strengthen the international environment, the Osservatorio Astrofisico di Catania funds a five- month internship targeted to European students having a bachelor degree in:
Physics or Fundamental physics or Applied physics

Art. 1 Research project

A public selection based on qualifications, possibly integrated by an interview, is open to award one internship for five months, financed by the funds Ob. Funzione 1.05.03.37.02 "Astronomia industriale 2016 (ref. Direttore Scientifico)"

The successful candidate will carry out the research entitled "**Investigation of Kernel Regression techniques for applications to radial-velocity timeseries obtained with the spectrograph HARPS-N by the GAPS collaboration**" under the scientific supervision of Dr. Antonino Francesco Lanza.

The research project concerns:

Exploitation of the Kernel Regression (KR) - as proposed by the GAPS collaboration (see, e.g., Lanza A. F. et al. 2018, *Astronomy & Astrophysics*, vol. 616, A155) – and comparison with Gaussian Processes (GP) methods to reduce systematic errors in planetary mass determination in exoplanetary systems observed by HARPS-N in the framework of the GAPS collaboration.

Art. 2 Duration and internship amount

The internship is awarded for 5 months.

The gross amount of the internship, paid in five postponed instalments, is Euro 1.250,00

This amount is net of burdens to be charged to INAF – Osservatorio Astrofisico di Catania, social charges, and includes the social security tax charged to the fellow.

Italian taxation will be applied.

The fellow will be requested to take out an accidents insurance for the duration of the internship.

Art.3 Eligibility

Candidates from the European Community who have got a Bachelor degree either in Astronomy or

Astrophysics or Physics or Fundamental Physics or Applied Physics from no more than four years are eligible.

Applicants having obtained a Bachelor Degree in any European or non-European country, which has not been declared “equivalent” to an Italian Bachelor Degree according to the Italian legislation, must submit a specific request to the examination board to have the title examined and possibly declared correspondent to the Italian Master Degree, using Annex 1. The “declaration of equivalence” issued by the board of evaluation is to be used exclusively for this competition.

To this aim, applicants must attach the documents listed in art. 5 to the application form.

The requirements for participating to the competition must be met on the deadline for submitting applications.

Art. 4 Ineligibility and incompatibility with other funding

The internship cannot be held contemporarily with whatever further income.

Art.5 Application process

Applications, with attached CV and any document or publication deemed useful for the purposes of this competition must be submitted, in Italian or in English, filling the attached forms (Annexes 1, and 2 the latter only for EU citizens) exclusively via mail at the following PEC address: inafoacatania@pcert.postecert.it and must **arrive not later than h. 13:00 (local time) of 7th February 2022.**

Late arrival will not be considered.

Please quote “Internship GAPS” in the subject of the e-mail.

For Italian participants: the forwarding will be valid only if the applicant sends the application form from his/her own PEC email box.

For European and non-European participants: the application form must be sent to the PEC address: inafoacatania@pcert.postecert.it from his/her email address.

The forwarding time and date is certified by the IT system.

The applicant must clearly and precisely state in the application form, under his/her own responsibility:

1. name(s) and surname,
2. date and place of birth,
3. nationality, Italian tax code (if any),
4. place of residence and address for correspondence and email address if available or PEC
5. the possession of the bachelor degree in one of the following fields, Physics, Fundamental, or Applied Physics, the University which awarded the degree and the obtained marks (if attributed)
6. to enjoy civil and political rights
7. not to have reported convictions, or ongoing pending convictions (if not, please specify it)
8. titles of any other qualifications awarded (e.g. specialization diplomas, attendance certificates for post-graduate specialization courses held in Italy or abroad, documented research, under contract, conducted at public or private bodies, scholarships or appointments, both in Italy and abroad);



9. not to hold scholarships, research grants or contracts or to be willing to terminate them in case of successful evaluation,
10. that s/he will communicate promptly any changes in the positions referred to in the application as well as changes to the residence and contact details;
11. that s/he has read and understood the regulations governing the call for applications.

The lack of any of the above-mentioned declarations causes the exclusion from the selection procedure for incomplete application.

The following documents have to be submitted:

1. Annex 1 "Application form" signed and dated;
2. Annex 2 "Self-declaration"
 - i. that the applicant holds a Bachelor Degree in Physics, Fundamental or Applied*
 - ii. list of courses taken during the Bachelor (syllabus)*
 - iii. the applicant has enrolled in a Master*
3. any other degree or certificate of schools and specialization course he/she has taken (documents testifying proficiency in scientific programming, especially in Python and/or C++); or attendance of university courses.
4. Only if the qualification has not been deemed valid for Italian law: request of validity for the sole purposes of participation in the competition together with mentioned declarations (Annex 1);
5. "Curriculum vitae", signed and dated by the applicant, providing evidence of qualifications, professional experience and the skills required to carry out the research and including a list, if applicable, of grants and fellowships held in the past and a statement of research interests;
6. copy of a valid identity document (ID card or passport)
7. PDF files of certificates of attendance of courses relating scientific programming, i.e. in Python and/or C++
8. List of documents attached.

Art. 6 Causes of exclusion from the competition

Applicants are admitted to the selection with reserve and may – at any time – be notified of exclusion from the selection procedure for the following reasons:

- Applications arrived after the deadline mentioned above or
- Applications with incomplete documentation
- unsigned application form, curriculum or declarations
- Applications lacking of requirements listed in art. 3
- Applications lacking of ID
- Applications with false declarations or false documents

will not be considered

Art 7. Board of evaluation

The board of evaluation, made of three members and a secretary, is appointed, ensuring an adequate balance of gender, by the Director of INAF-Osservatorio Astrofisico di Catania.



Art. 8 The selection process

The selection is based on qualifications possibly integrated by an interview (which can also be done remotely).

The Selection Committee can establish a short list of the eligible applicants to be interviewed, on the basis of qualifications and documented experience in scientific or technological activities on the specific subject of the research internship. All the stages of the selection procedure can be performed also using electronic devices for the communications.

The assessment of the CV and of the qualifications precedes any interview and will be made on the basis of the documents attached, their relevance to the scientific/technological research programme and on possible possession of one or more of the preferential titles.

The total ranking score is 100 points, 70 points are the maximum score for qualifications and 30 points are the maximum score for the interview.

The candidate must obtain a minimum score of 42 points for qualifications to be eligible.

The maximum of 70 points reserved for the evaluation of the CV and qualifications are assigned as follows:

1. Curriculum vitae et studiorum, up to a maximum of 30 points;
2. PhD thesis up to a maximum of 5 points;
3. Master of Science, up to a maximum of 5 points;
4. Any post-graduate scientific activities and/or PhD courses, up to a maximum of 10 points;
5. Documented experience of coding in Python, up to a maximum of 10 points;
6. Publications up to a maximum of 10 points.
7. Previous internships or fellowships carried out at INAF-Osservatorio Astrofisico di Catania

Preferential Titles:

- good knowledge of Python programming language);
- knowledge of IDL, C++, and Fortran programming languages

Applicants selected for the interview will be informed with a minimum of 15 days' notice by e-mail, containing the individual score for qualifications.

Any interview will be aimed at verifying the applicant's specific experience and will focus on the topics of the research project listed in art. 1. It will be assigned up to a maximum of 30 points.

Applicants are expected to get the minimum score of 20 points in the interview to be eligible.

At the end of the selection process the board of evaluation will draw up the ranked list.

Art. 9 Awarding of the internship

The highest ranked candidate will receive the written notification awarding of the research internship. Within 10 days from receipt of the formal notification, the successful applicant must send a formal declaration of acceptance of the research grant. The declaration will also state that s/he is not subject to any of the exclusion conditions listed in article 4 of this Call.

If the candidate does not provide the declaration of acceptance within a time limit of 10 days, s/he will lose her/his entitlement to the research internship, which can be awarded to the next ranked candidate.

Before the start of the internship, the successful applicant is requested to take out an insurance against

accidents at work, valid for the duration of the internship. As for third party liability risks the fellow will be covered by the insurance policy drawn out by INAF.

If the fellow is employed by a public or private employer, before the start of the internship, s/he is requested to submit a copy of employee leave, shall the forfeiture of the internship.

The fellow will carry out the research activity in a flexible, autonomous, continuous way and in coordination with the scientific supervisors and the research team.

The fellow who after starting the research activity interrupts it for no valid reason or proves to be unsuitable for it, will lose the right to the internship, on the advise of the scientific supervisors.

The contract will be terminated without notice if:

- the fellow does not carry on the research activity;
- the fellow incurs in the one of the incompatibility clauses stated in art. 4;
- the fellow lacks repeatedly to fulfil requirements or, according to the evaluation of the scientific supervisors, Dr. Antonino Francesco Lanza, eventually shows evident lack of skills at the planned research activities;
- the fellow has presented false declarations or false documents.

The fellow can terminate the contract giving 30 days' notice to the administrative office.

If no notice is given, the amount corresponding to the missing days of notice will be withheld from the paycheck, or directly reimbursed by the fellow.

Under no circumstances the internship implies a subordinate employment relationship or gives right to access to permanent INAF staff positions.

Art.10 Evaluation of research activity

Before the expiration of the internship, the fellow will submit a detailed report, describing the progresses in the research topic.

Art. 11 Information under articles 13 and 14 G.D.P.R. 2016/679

1. Pursuant to Article 13 of the "**Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC**" ("**General Data Protection Regulation**"), the National Institute for Astrophysics, acting as data controller, hereby informs that the personal data of applicants will be processed exclusively for the purposes connected to the aforementioned procedure by INAF personnel who, under the direct authority of the controller, are authorized to process personal data.
2. The personal data shall be processed even through automated means, also in case of communication to third parties.
3. The provision of such data is necessary to verify the participation requirements and failure to indicate them may preclude such verification.
4. Pursuant to Articles 15-21 of the "**General Data Protection Regulation**" the applicants can require anytime the access to his/her personal data, the rectification and correction of his/her personal data and/or, where possible, the erasure of his/her personal data and/or the limitation of his/her data processing and the opposition of his/her data processing.
5. Applicants can exercise the abovementioned rights by addressing to the Data Protection Officer of the National Institute of Astrophysics at the following addresses: _____

INAF



ISTITUTO NAZIONALE DI ASTROFISICA
OSSERVATORIO ASTROFISICO DI CATANIA

- a) Viale del Parco Mellini, 84 - 00136 Rome (registered letter);
- b) rpd@inaf.it (Email);
- c) rpd-inaf@legalmail.it (Certified mail).

Art. 12 Call advertisement

The present call will be advertised on the website of the INAF-Osservatorio Astrofisico di Catania. Moreover, it will be sent to the Scientific Director of INAF for publication on INAF website. For further scientific information about the position and planned activities, contact the Scientific Responsibles, Dr. Antonino Francesco Lanza (antonino.lanza@inaf.it) For further administrative information contact Dr. Daniela Recupero (daniela.recupero@inaf.it). For what not explicitly mentioned in this call, please refer to the Italian Call (Determina Direttoriale n. 39/2022) which contains detailed information on the laws and regulations in force which rule Italian public selection processes.

Catania, 15 gennaio 2022

The Director
Dr. Isabella Pagano