



DD. 18/2017

**Subject: Selection procedure by qualifications and possible interview for the assignment of one research grant entitled: “HPC support and development”**

**CUP: C52F17000080005**

**NATIONAL INSTITUTE FOR ASTROPHYSICS  
ASTRONOMICAL OBSERVATORY OF TRIESTE**

**The Director**

- **In accordance with** Law n. 240 dated 30 December 2010 and its art. 22 in particular;
- **In accordance with** the Provisions for the assignment of research grants approved by INAF Administrative Council on June 22<sup>nd</sup> 2011;
- **Given** the Memorandum of Understanding within the Framework Agreement between INAF and CINECA, whose purpose is to perform the joint research activity New Frontiers in Astrophysics: New Generation HPC and Data Exploration
- **In accordance with** the request by dr. Riccardo Smareglia, responsible for the ICT Office of the INAF Scientific Direction;
- **Ascertained** that financial coverage of the grant amounting to 34.250,00 euro has been provided, with assigned funds to Budget 2017, CRA 1.04 (INAF-Osservatorio Astronomico di Trieste, to Ob.Fu 1.05.01.24.01 Calcolo Scientifico (ref. Giampaolo Vettolani) – ICT, ch. 1.01.01.01.009 – “Research Grants”).

**DECREES**

**Art. 1- Research Project**

A call is open for a selection procedure on the basis of candidates’ qualifications, possibly integrated by an interview, for the assignment of one “Post-Doc” research grant of the duration of one year, with a possible extension, entitled: **“HPC support and development”**.

The research program is comprised within the framework of the MoU between INAF-CINECA and is entitled “New Frontiers in Astrophysics: HPC and New Generation Data Exploration”.

The research activities to be performed are the following:

- Support to the INAF community for the applications porting on HPC calculating infrastructures, along with both the prototype experimentation and the production phases;



- Development of SW models in collaboration with INAF research groups for the new HPC calculating systems using accelerators (AVX, GPU, etc), and many-cores calculating systems;
- Support and development for post-processing procedures to the INAF research groups;
- Support to innovative and internationally important projects (Flagship Project) with the development/porting of applications in HPC environments;
- Monitoring of the use of HPC available resources to the INAF community within the INAF-CINECA MoU;
- Scientific visualization of data;
- Dissemination of results.

Further questions on the scientific project can be addressed to Ugo Becciani (e-mail: ugo.becciani [at] inaf.it).

## **2 – Requirements for participation**

Participation to the selection is reserved to Italian and foreign citizens holding the following minimum requirements:

PhD degree either in Physics or Astronomy, or Computer Science or Computer Engineering or equivalent degree, issued by an Italian (or foreign) Advanced Studies Institute or University.

Or

- degree either in Physics or Astronomy or Computer Science or Computer Engineering, issued according to the previous Italian University regulations or degree in Physics or Astronomy or Computer Science or Computer Engineering, which would formally entitle to the admission to a doctorate awarded by an Italian university or by a foreign university, together with at least three years of documented experience in scientific or technological activities after the degree;
- Competence in the development of scientific software for HPC Systems with programming languages C, C++, FORTRAN, MPI computing paradigms, Open MP and pthreads;
- Knowledge of LINUX user and development environments;
- Knowledge of one scripting language (e.g.; python, perl, or others);
- Attitude to teamwork;
- Good knowledge of English.

Preference will be given to knowledge and/or proved experience in the following:

- GPGPU computing and other technologies for computing acceleration;
- Data Analytic, Big Data Environments and Cloud Computing;
- Optimization of floating point computing and of I/O operations;
- Competence in scientific visualization;
- Knowledge of development instruments such as SVN or GIT, autotools or cmake;
- Knowledge of application framework such as R, MATLAB, STATA;
- Teamwork and problem solving skills, result- and deadline-oriented attitude;
- Competence in the design of parallel processing software in asynchronous architectures (task-based)

## **Art. 3 – Application**

Applications must be submitted in English or Italian, by e-mail with acknowledgement of receipt to the following email address: inafatrieste[at]pcert.postecert.it.





Applications have to be submitted by and not after midday (UT) April 28, 2017. Late submissions will not be considered.

Applications that are not consistent with the attached form (Annex 1) or without the applicant's signatures will be excluded from the selection procedure.

The application must be submitted with the e-mail subject: "Application for: Research grant - : - ***"HPC support and development"*** at INAF- Osservatorio Astronomico di Trieste".

Aware that false declarations are punishable by law and that the Administration will carry out random checks on their accuracy, the applicant must state clearly and precisely in the application, under his/her own responsibility:

- name(s) and surname, date and place of birth, nationality, place of residence and address for correspondence;
- that s/he satisfies all the requirements described in article 2 of this Call;
- that s/he is aware of and is not ineligible under any of the restrictions described in article 4 of this Call.

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

For selection purposes the applicants:

- shall directly state any academic qualifications in the application form (Annex 1)

in addition

- non-EU citizens residing outside Italy, if successful, must produce originals or suitably certified copies of academic qualifications obtained outside Italy.

The following documents have to be submitted:

1. Annex 1 "Application form";
2. Annex 2 "Curriculum vitae", **signed and dated** by the applicant, providing evidence of possession of the titles and the skills required to carry out the research and including a list, if applicable, of grants and fellowships held in the past;
3. copy of a valid identity document (ID card or passport);
4. list of publications;
5. any other qualification, working task, research activity for public and private institutions and publications that the applicant deems appropriate to submit.

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:

- submission of the application after the deadline;
- incomplete and/or unsigned application form;
- unsigned curriculum vitae;
- lack of the copy of a valid identity document;
- lack of the requirements indicated in paragraph 2.

Should the reasons for exclusion be ascertained after completion of the selection procedure, the applicant will lose any right deriving from participation in the selection procedure; the same will apply to applicants providing any false statement or document.

INAF accepts no responsibility for lost applications or documents where this is due to the applicant having provided incorrect contact details or having failed or delayed in notifying any changes to these details.

#### **Art. 4 – Ineligibility and incompatibility with other funding**

Full professors, associate professors and "ricercatori" in Italian universities and employees of Italian research public institutions are all excluded from the competition.





The grant cannot be held at the same time with attendance at academic courses as those that formally give access to a PhD, as well as with attendance at PhD courses with fellowship. For employees of the Italian Public Administration (Italian State) compulsory unpaid leave of absence is foreseen.

The grant cannot be held contemporarily with other fellowships of whatever kind, except those awarded with the aim of integrating the training or research activity of the fellowship holder through a period spent abroad.

Aggregation of income from working activities, also part-time, carried out continuously is not accepted. Instead, limited self-employed occasional work is compatible with the grant, only if this is not prejudicial to the research activity carried out for INAF. This must be authorized in advance by the Director of INAF-Osservatorio Astronomico di Trieste.

Retired persons are not eligible for Research fellowship.

Also excluded from participation are any applicants who carried out Research fellowships under article 22 of Italian Law 240/2010 for a total period exceeding six years, as amended by Law 11/2015, including extensions, but excluding the periods in which the grant was held in coincidence with doctoral studies up to the maximum legal time limit of the course, and excluding periods of maternity leave or sick leave, in accordance with current legislation. When formally accepting the grant, the successful candidate will issue a declaration of absence of inadmissible cumulating of grants/fellowships.

#### **Art. 5 – Duration of the Research fellowship**

The Research fellowship is expected to begin as soon as possible, but within July 1<sup>st</sup>, 2017. The exact initial date could be reasonably delayed if requested by the completion of administrative procedures and/or for the cases mentioned in art. 10 of this call.

The grant is for one year, with a possible extension, depending on the development of the project, the favourable review of the supervisor and on funding availability.

#### **Art. 6 – Host Institution**

The host institution of the grant is CINECA (via Magnanelli 6/3, Casalecchio di Reno, Bologna).

#### **Art. 7 – Salary amount**

The grant is worth 28,000.00 (twenty-eight-thousand) Euros gross per year. This amount is net of burdens to be charged to INAF-Osservatorio Astronomico di Trieste and will be paid in deferred monthly instalments.

Applicable fiscal rules are the provisions of art. n. 4 of Italian law n. 476/1984 and subsequent modifications and integrations. Applicable social security rules are art. n. 2, paragraph 26 and following paragraphs of the Italian law n. 335/1995 and subsequent modifications and integrations. Applicable rules for obligatory maternity leave are provided in the Decree of the Ministry of Labour and Social Security dated 12 July 2007, published in the “Gazzetta Ufficiale” n. 247 dated 23 October 2007. Applicable rules for sick leave are provided by art. n. 1, paragraph n. 788 of Italian law n. 296 dated 27 December 2006 and subsequent modifications. During the period of obligatory maternity leave the allowance paid by INPS (Italian national institute for social security) according to art. n. 5 of the above Decree dated 12 July 2007 is supplemented by INAF up to the total amount of the grant. The period of obligatory maternity leave will not contribute to the duration of the grant foreseen by the contract.

As for third party liability, the grant holder will be covered by insurance policy drawn up by INAF. This insurance policy will not cover the civil liability of the grant holder towards INAF.

The grant holder must draw up at his/her expenses an insurance policy against accidents at work.





### **Art. 8 – Selection Committee and selection procedure**

The selection of candidates will be performed by a Selection Committee appointed by the Director of INAF-Osservatorio Astronomico di Trieste.

The Selection Committee is composed of three members from both Italian and foreign research staff, including also University staff, with expertise in the research field of the position offered in this announcement, and will include the principal investigator of the project. According to the law in force, the composition of the Selection Committee should comply, when possible, with gender balance. The president of the Selection Committee is nominated in the appointment decree and is chosen between the Committee members. In the decree the Selection Committee Secretary is also appointed.

The selection is based on qualifications possibly integrated by an interview. To be admitted to the interview, candidates must exhibit their identity documents.

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 fellowship. All the stages of the selection procedure (e.g. meetings of the Selection Committee, interviews and so on) can be performed also using electronic devices for the communications.

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

The total ranking score is 100 points, of which 60 points is the maximum score for qualifications and 40 points is the maximum score for the interview.

At the end of the selection procedure the Selection Committee will draw up the ranked list.

The approval decree of the selection procedure and the ranked list will be published on the following website: [www.oats.inaf.it](http://www.oats.inaf.it)

### **Art. 9 – Awarding of the fellowship**

The highest ranked candidate will receive written notification of award of the research fellowship.

Within 10 days from receipt of the formal notification of the award s/he must provide 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 fellowship, which can be awarded to the next ranked candidate.

Under no circumstances the signing of the contract starts a subordinate employment relationship or ensures any rights to access to permanent INAF staff positions.

### **Art. 10 – Fellowship obligations**

The holder of the fellowship:

1. will start the research activity at the date due as per the contract at CINECA, unless prevented by *force majeure* or exceptional circumstances, of which the Director of INAF-OATs must be timely informed;
2. will carry out her/his research activity under the supervision of the project manager, dr. Ugo Becciani, who will also monitor the fellow's activity progress;
3. is required to issue an activity report every six months. The activity report will be subject to approval from the scientific advisor and will be transmitted to the Director of INAF-OATs. Approval failing, duly reasoned by the scientific advisor, will give INAF-OATs the right to terminate the contract;



4. is required to send a written note in case of withdrawal, with at least 30 days notice, otherwise the INAF-Osservatorio Astronomico di Trieste is entitled to retain or request the reimbursement of the salary amount corresponding to the period of not notified.

The holder of the fellowship who does not carry out her/his research activity regularly without producing justified reasons or lacks repeatedly to fulfil requirements or, according to the evaluation of the supervisor, dr. Ugo Becciani, eventually shows evident lack of skills at the planned research activities, will incur the termination of the contract.

Temporary suspensions of the research fellowship are due in case of obligatory maternity leave or in case of illness which lasts longer than one month or to any other serious reason. The reasons for suspending the research fellowship must be proved and certified, and promptly sent to the Director of INAF-OATs.

#### **Art. 11 - Proceedings Responsible**

In accordance with Art. 8, paragraph 3 of INAF Provisions on the assignment of research grants, dr. Mirella Giacchetti is the responsible of the competition proceedings relevant to this competition announcement (e-mail: [giacchetti\[at\]oats.inaf.it](mailto:giacchetti[at]oats.inaf.it)).

#### **Art. 12 – Applicable regulation**

The Astronomical Observatory shall abide by provisions in force promoting equal opportunities for women and men, non-discrimination and respect of privacy in processing personal data.

For what not explicitly mentioned in this announcement, the Observatory shall act in compliance with the regulations in force concerning public selection procedures, when applicable by analogy.

Trieste, March 28, 2017

Director  
Prof. Stefano Borgani





## ANNEX 1 APPLICATION FORM

To the Director of INAF-Osservatorio Astronomico di Trieste  
Via Tiepolo n. 11  
34143 Trieste

I, THE UNDERSIGNED,  
(Forename(s))..... (Surname).....  
Place of birth (City/State/Country) .....  
Date of birth (dd/mm/yy) .....  
Nationality .....  
Gender .....  
Permanent residence address (number/street/town/postal code/Country):  
.....

Email address: .....

agree to the processing of my personal data, in accordance with Italian Leg. Decree n. 196/2003, for the purposes of the present selection procedure.

I, THE UNDERSIGNED,

having read the Call for applications D.D 49/2016 for the appointment of one research fellowship entitled: - : -***“HPC support and development”***:

request

to apply for the above mentioned fellowship, and to this end, aware that false declarations are punishable by law and that this Administration will carry out random checks on the accuracy of the declarations made by candidates,

DECLARE

under my own responsibility

- that I hold the following Research Doctorate (PhD) ..... awarded by..... on date..... Title of thesis.....;
- that I hold the following educational qualifications....., awarded by.....Date.....;
- that I have a good knowledge of the English language;
- that I have ..... years of documented experience in scientific or technological activities;
- that I am aware of the restrictions described in Article 4, of the Call for applications for this research fellowship;
- that I have never received a research award as per art. 22, Italian Law 240/2010;



- that I have previously received a research awards as per art. 22, Italian Law 240/2010 and, in particular I have been the recipient of<sup>1</sup>:
- a research fellowship entitled .....,  
at (name of the institution).....,  
beginning.....ending.....total months .....
- a research fellowship entitled .....,  
at (name of the institution).....,  
beginning.....ending.....total months .....
- a research fellowship entitled .....,  
at (name of the institution).....,  
beginning.....ending.....total months .....
- that I am not a retired person;
- that I am aware that, under art. 22 Italian Law 240/2010, the research fellowship:
  - cannot be held contemporarily with attendance at academic courses, “laurea specialistica” academic courses, and “laurea magistrale” academic courses, as well as with attendance at PhD courses with fellowship;
  - cannot be held contemporarily with other fellowships of whatever kind, except those awarded with the aim of integrating the training or research activity of the fellowship holder through a period spent abroad;
  - cannot permit aggregation of income from working activities, also part-time, carried out continuously.
- that I wish to receive any communication relating to the selection at the following address and that I will give due notice of any change of address:

Address (number/street/city /postal code/Country):  
.....  
Email address: .....

I attach to this form:

- Attachment 2 “Curriculum vitae”, **signed and dated** by the applicant, providing evidence of possession of the skills required to carry out the research and including a list, if applicable, of grants and fellowships held in the past;
- copy of a valid identity document (ID card or passport);
- list of publications;
- any other qualification, working task, research activity at public and private institutions and publications that the applicant deems appropriate to submit

Date

Signature

\_\_\_\_\_

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<sup>1</sup> Indicate the number of months for which the award was used and the name of the institution granting the award. Please provide details of each award, for example, if you have had two awards of 24 months each at the same institution indicate these as two separate awards on two different lines.





**ANNEX 2  
CURRICULUM VITAE**

I, THE UNDERSIGNED,

aware that false declarations are punishable by law and that this Administration will carry out random checks on the accuracy of the declarations made by candidates

DECLARE UNDER MY OWN RESPONSIBILITY

THAT THE CONTENT OF THE ATTACHED “CURRICULUM VITAE” IS TRUE

Date

Signature\*

*\* the photocopy of a valid identity document of the signer must be attached*

