

DD 55/2015

Subject: *selection procedure by qualifications and possible interview for the assignment of one research grant entitled: “Re-Engineering of parallel codes for Cosmology and Astrophysics on platforms for Exascale Computing”*
CUP: *C92I15002920006*

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

The Director

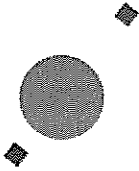
- ***In accordance with*** Law n. 240 dated 30 December 2010 and its art. 22 in particular;
- ***In accordance with*** the Provisions for the assignment of research grants approved by INAF Administrative Council on June 22nd 2011;
- ***In accordance with*** the request by dr. Giuliano Taffoni, project manager ExaNeSt;
- ***Ascertained*** that financial coverage of the grant for Euro 38,760.00 is granted for CRA 1.05.02.10.10 “HORIZON 2020: ExaNeSt” on chap. 1.05.08.01 entitled: “Research Grants” of 2015 budget;

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 entitled: ***“Re-Engineering of parallel codes for Cosmology and Astrophysics on platforms for Exascale Computing”***.

Research activity will be conducted at INAF-OATs within the frame of the H2020 European project European Exascale System Interconnect and Storage (ExaNeSt) whose aim is to develop a prototype high performance computing platform oriented to exascale HPC solutions and to re-engineer scientific applications that would benefit of the new Exascale computing infrastructures. Research activity involves the collaboration with the OATs high performance computing and cosmological simulations group. Research will consist in re-engineering and optimizing highly parallel Astrophysical and Cosmological codes with the aim of executing them on the ExaNeSt project devised hardware platform.



Further questions on the scientific project can be addressed to dr. Giuliano Taffoni (e-mail: taffoni[at]oats.inaf.it).

Art. 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 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 Engineering, issued according to the previous Italian University regulations or degree in Physics or Astronomy, Computer Science, 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;

Applicants will be required a minimum of three years' experience in software development, in particular within High Performance Computing (also explicitly realized software for open-source specific projects or adjustments of preexisting software for such projects will be evaluated).

Applicants' knowledge and experience with reference to:

- High Performance Computing: MPI, OpenMP, CUDA, OpenCL
- Software engineering
- Software developing
- C/C++
- Continuous integration and Software Quality Assurance: github, svn

will be ascertained as well.

Preferred qualifications will be considered:

- Knowledge of programming languages and scripting: Java, Python, Shell
- Knowledge of Linux and Unix operating systems
- Knowledge of N-body and hydrodynamical simulation codes within astrophysics
- Knowledge of FPGA systems or "embedded systems"
- Networking
- Good knowledge of English


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) November 6, 2015. 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 - *Re-Engineering of parallel codes for Cosmology and Astrophysics on platforms for Exascale Computing* " 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 and a statement of research interests;
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 should also arrange for two signed letters of reference by persons familiar with her/his work to be sent, before the deadline, to the e-mail address: [inafoatrieste\[at\]pcert.postecert.it](mailto:inafoatrieste[at]pcert.postecert.it), and in copy to the address [taffoni\[at\]oats.inaf.it](mailto:taffoni[at]oats.inaf.it).

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.

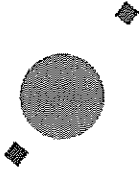
Should the reasons for exclusion be ascertained after completion of the selection procedure, the applicant will lose any right deriving from participation in the selection procedure; the same will apply to applicants providing any false statement or document.

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 on December 1st, 2015 and will end on November 30, 2016. 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.

The assignment of the second year of the research grant position is dependent upon the actual financial coverage as foreseen in the premise of this call.

Art. 6 – Host Institution

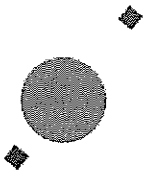
The host institution of the grant is INAF-Osservatorio Astronomico di Trieste.

Art. 7 – Salary amount

The grant is worth 32,000.00 (twenty-two 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.



Insurance coverage against accidents at work will be provided by INAF-Osservatorio Astronomico di Trieste

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 70 points is the maximum score for qualifications and 30 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

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 she/he must provide a formal declaration of acceptance of the research grant. The declaration will also state that she/he is not subject to any of the exclusion conditions listed in article 4 of this Call.

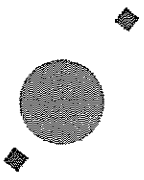
If the candidate does not provide the declaration of acceptance within a time limit of 10 days, she/he will lose his/her entitlement to the research fellowship, which can be awarded to the next ranked candidate.

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 INAF-Osservatorio Astronomico di Trieste, 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. Giuliano Taffoni, who will also monitor the fellow's 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. Giuliano Taffoni, 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)).

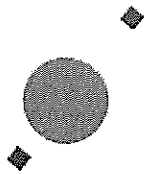
Art. 12 – Applicable regulation

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, October 13, 2015


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. n. 55/2015 for the appointment of one research fellowship entitled: ***“Re-Engineering of parallel codes for Cosmology and Astrophysics on platforms for Exascale Computing”***

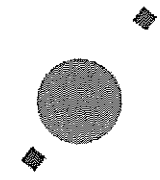
request
to apply for the above mentioned fellowship, and to this end, aware that false declarations are punishable by law and that this Administration will carry out random checks on the accuracy of the declarations made by candidates,

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 professional 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 of¹:
- a research fellowship entitled

¹ 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.



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

1 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

