JOB ANNOUNCEMENT   DD 110/2022

The Istituto Nazionale di Astrofisica – Osservatorio Astrofisico di Arcetri (INAF-OAA) is offering a two-year post doctoral position in *Optical turbulence forecast for ground-based astronomy and the free space optical communication in the visible*"

RESEARCH PROJECT
The selected candidate will join the Optical Turbulence (OT) group of the Osservatorio Astrofisico di Arcetri (OAA) and he/she will be involved in the R&D activities related to the optical turbulence forecast applied to the ground-based astronomy in particular in the international projects FATE (applied to the Very Large Telescope) and ALTA Center (applied to the Large Binocular Telescope) in which INAF-OAA is leader. Such a forecast is crucial for the optimization of observations performed with instrumentation equipped with adaptive optics and interferometry on top-class telescopes (8-10 m diameter) and new generation telescopes (Extremely Large Telescopes – ELT with 30-40 m diameter).

The group is in a workforces expanding phase and we are looking for candidates interested in a professional growth and motivated by the team work in international frameworks and in multidisciplinary activities. The selected candidate will be involved in the mentioned projects and in research finalized to the application of optical turbulence forecast to the free space optical satellite communication in the visible.

It is requested a good ability in data analysis, autonomy in programming. Appreciated knowledge of Python. We are particularly interested in candidates with experience in one or more of the following areas:

(1) Development and/or use of hydrodynamic codes applied to the atmosphere. The candidate will be involved in research in the field of the optical turbulence and its parameterization. Experience with GCMs and/or mesoscale models is appreciated.

(2) Development and application of algorithms of machine learning and deep learning, or artificial neural network, etc. The candidate will be involved in development and validation of algorithms aiming to improve the forecasts performances. Experience in data assimilation is appreciated even if not necessary.

(3) Development of real-time data elaboration systems, also operational, finalised to the atmosphere forecast: reading of data to be used for the atmospherical model initialisation, realisation of simulations, pre and post-processing procedures, visualisation of outputs and storing.

ELIGIBILITY
The appointment is expected to begin by **June 30 2023** and will be for two years in the first instance, and renewable afterwards, subject to funding availability and performance review. The yearly gross salary is 29,000 Euros.

Prospective candidates are encouraged to contact:
Dr. Elena Masciadri (elena.masciadri@inaf.it) INAF OAA

The deadline for sending applications is **March 31st 2023 – 11.59 p.m. (Italian time).**

REQUIREMENTS
- PhD in Physics or Astronomy or Mathematics or Engineering or Informatics or equivalent qualification awarded by public or private Universities, Institutions, Research Organizations or Centers or other qualified research bodies, both in Italy

and abroad, in the topics relevant to the scientific and technological area and the research object of this call.

or alternatively

- Master Degree in Physics or Astronomy or Mathematics or Engineering or Informatics or equivalent qualification, together with 3 years of documented experience, awarded by public or private Universities, Institutions, Research Organizations or Centers or other qualified research bodies, both in Italy and abroad, in the topics relevant to the scientific and technological area and the research object of this call.

With the sole scope of admission to this selection procedure, the equivalence of educational qualifications obtained abroad will be verified by the "Selection Committee" as of subsequent Art. 7, on the basis of documentation forwarded by the candidate as foreseen by Art. 3 of this "Call", provided that, in case the candidate is the winner of the aforesaid procedure, the Administration will acquire the results of the verification performed by the "Selection Committee" and will forward them together with the documentation listed in Article 3, paragraph 2, letter a) or b) of the Decree n. 189 of the President of the Republic of 30 July 2009, plus the application of the candidate, to the Ministry of University and Research with the scope to acquire the opinion foreseen in Article 4, paragraph 2 of the aforementioned Decree.

➤ **PREFERENCIAL QUALIFICATIONS**:
Expertise related to the object of the call

APPLICATION PROCEDURE
Applications must be sent via e-mail to: inafoaarcetri@pcert.postecert.it. In the email subject the applicant should make explicit reference to "*Bando Turbolenza.- Domanda per Assegno di ricerca Post Dottorato DD n. 110/2022*".

Applications must include the following Annexes **dated and signed**:
- the Application Form (Annex A);
- the self-certification Form (Annex B);

Two reference letters will be appreciated. Editors/contacts should address them by the deadline for application to: inafoaarcetri@pcert.postecert.it , reporting in the object of the mail: "DD n. 110/2022" and the name of the candidate they are referred to.

The applicant also needs to attach:
1) a copy of a valid identification document;
2) a curriculum vitae (**dated and signed**);
3) **if awarded outside Italy,** copy of academic qualifications and also transcripts in case of Master Degree;
4) a list of scientific publications;
5) any other work or publication the applicant deems useful;
6) a list of all submitted documents.

Incomplete or unsigned applications will be rejected.