

ANNOUNCEMENT OF PUBLIC SELECTION FOR 1 RESEARCH GRANT

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DESCRIPTION

The Scuola Normale Superiore announces a selection, based on work to date and interview, for 1 research contract as part of the research project MUR_PRO3_2021-23_CONG_RIC_BENZI “*Numerical STability of Neural Dynamical Systems*”, within the programme PRO3 2021-23.

The research is centered on the analysis and training of stable neural dynamical systems. The successful candidate will collaborate with faculty members at GSSI and SNS, developing novel techniques and algorithms for neural networks defined via nonlinear systems of ODEs and PDEs, combining techniques from Numerical Analysis, Network Science and Machine Learning. The successful candidate will carry on the research activity the first year at GSSI in L’Aquila and the second year at SNS in Pisa.

Duration of the contract: 2 years

Annual gross remuneration, inclusive of all taxes: € 30,000

Deadline for applications: December, 27th at 04:00 PM (Italian time)

Information about the selection procedure can be found below. Applicants are advised to read the official announcement (*Bando*) and to follow exclusively its detailed instructions should they decide to apply.

REQUISITES

The selection procedure is open to applicants who have completed a Master’s degree in Mathematics. Applicants who have completed the aforementioned degrees abroad may also apply, if that degree is recognized as equivalent to the corresponding Italian degree.

Knowledge of English language is also required to carry out the research activity. Research experience in one or more of the following areas is also relevant, but not mandatory:

- numerical linear algebra and matrix theory;
- numerical methods for dynamical systems;
- numerical optimization and applications;
- matrix methods in systems theory and data science;
- mathematics of machine learning and compressed sensing;
- graph theory and network science.

HOW TO APPLY

Applicants with all the aforementioned requisites who wish to participate in the selection process must submit their application exclusively online, using the online dedicated PICA procedure at the following link: <https://pica.cineca.it/sns>

The PICA app can be accessed via SPID, by choosing the institution “Scuola Normale Superiore” from the page of available federations; alternatively, the procedure will necessarily require an e-mail address in order to register into the system.

Once identified/registered and once procedure relating to this selection has been accessed, they must also upload as attachments, through the online PICA procedure, exclusively in PDF format:

- a) a non-authenticated photocopy of a valid identity document;
- b) an up-dated curriculum vitae containing a detailed description of their educational career and professional experience;
- c) publications, including their PhD thesis, and any other document that they believe may be useful to the assessment of their application. Each publication must occupy a space of not more than 30 megabytes. For those unpublished texts accepted for publication, applicants must include the relative document in its final form and the publisher’s certificate or a detailed substitute statement of affidavit confirming that the relative text has been accepted for publication (please use Attachment A);
- d) a list of the submitted publications.

Until the deadline for the submission of applications, the procedure can save any data inserted in draft mode, enabling their modification and/or integration.

By the established deadline, applications for participation in the selection must be filled in definitively in all their parts, signed, on pain of exclusion, in one of the modes indicated by the online procedure, and submitted – together with all the attachments – by means of the same online procedure.

No signature will be required when submitting the application only if the SPID is used to access procedure.

The date of online submission will be certified by the PICA procedure; candidates will be notified of the receipt of their applications and their subsequent registration by means of two separate e-mail messages. Each application will be attributed a separate identification number (application ID) and a registration number, both visible inside the application; the application ID must be used, together with the call code 22-AR-MAT08-MB-13, for any subsequent communications.

Once applications have been submitted online and the confirmation of the online PICA procedure has been received, it will no longer be possible to access them in order to modify them; they may only be withdrawn using the function “ritira/withdraw” on the initial page of the procedure. Candidates can, however, submit a new application. After the deadline for submission, the online procedure will no longer permit access or the online transmission of applications. Please note that the online procedure may undergo temporary suspensions for technical reasons.

No other form of transmission of applications and/or documentation for participation in the selection is allowed other than those indicated above. Solely in the case of proven and certified technical unavailability of the online PICA procedure, the Scuola reserves the right to accept admission applications and/or supporting documentation submitted in other modes, provided they are transmitted before the call deadline.

[Technical instructions](#) for completing the application form are available on the Scuola’s website.

In the online application, applicants may also indicate up to 3 experts in the field of research, to whom the Scuola Normale Superiore will ask to send a letter of reference to be received within 4 days following the application deadline.

INTERVIEW

The Committee can decide to conduct face-to-face interviews or online interviews with the admitted applicants. In any case, the online interview will be permitted to applicants who live permanently outside Italy or are domiciled abroad for work, study or research and request to conduct an online interview instead of a face-to-face interview. Applicants who are unable to carry out an on-site interview for further different reasons can request an online interview and the Committee will decide whether or not to permit it.

In case of online interview, candidates will have to comply with the [Guidelines](#) on how to conduct online interviews available on the website of the Scuola Normale, under penalty of exclusion.

The interview will focus on the applicants' qualifications, on the scientific topics related to the research to be carried out, on the applicants' proficiency in English and on the following scientific issues: neural networks, graph theory, numerical linear algebra, numerical methods for ODEs and PDEs.

For the interview, applicants must show a valid identification document, otherwise they will not be permitted to take part in it.

Applicants who submit the wrong contact details, miss the connection at the date and time communicated by the Administration or fail to submit an identification document forfeit their right to participate in the interview and consequently in the selection process.

The Scuola Normale is not responsible for any technical problems that may arise during the interview.

CONTACT DETAILS FOR FURTHER INFORMATION

- a) For further administrative information about the application procedure and the relative documentation, or about the selection process itself, please contact the Servizio Personale a contratto (e-mail job.opportunities@sns.it).
- b) For any technical problems, candidates must use exclusively the link "Per problemi tecnici contatta il supporto" - "For technical problems contact the online help desk" - visualised in the section at the foot of the page of the web site <https://pica.cineca.it/sns/>