Announcement n. 25864

POST-DOCTORAL SENIOR LEVEL 3 RESEARCH GRANT IN THEORETICAL PHYSICS

The 2024/2025 INFN Research Grant Program offers 15 (fifteen) positions for research activity in Theoretical Physics.

Eligible candidates may be:
- Non-Italian citizens, or
- Italian citizens who, at the submission deadline, hold a position in a foreign institution and have been continuously abroad for at least three years.

The Research Grant cannot be awarded to those who have already benefited from “Assegni di Ricerca” in Italy for a total duration of six years.

If the winners of this competition have already benefited from INFN Research Grant for a period of less than six years, the new Research Grant may be awarded up to the aforementioned limit.

Those who have already won a Research Fellowship in Italy of the same type with INFN cannot participate in the call.

Applicants must have a Ph.D. degree (or an equivalent qualification), obtained no more than eight years prior to the call deadline, i.e. on or after November 10th, 2015. This time limit may be extended in case of:
- Maternity (18 months for each child born before or after the Ph.D. award, up to a maximum of 4.5 years);
- Paternity (effective time of leave taken for each child born before or after the Ph.D. award, up to a maximum of 4.5 years);
- National Service (effective time of leave taken after the Ph.D. award);
- Long-term illness, i.e. over 90 days, (effective time of leave taken for each incident occurred after the Ph.D. award).

The total elapsed time since the award of the Ph.D. should not in any case exceed twelve years and six months. The reasons for an extension of the time limit must be duly documented only in case of a successful application. Failure in providing the appropriate documentation will result in the ineligibility for the appointment.

Candidates who are preparing their doctoral thesis are eligible to apply; however they must have obtained their Ph.D. degree by November 1st, 2024 or in any case before taking up their appointment with INFN.

The research topics of the 15 Research Grants and the corresponding INFN sites are listed in Annex 1. Each candidate may apply up to a maximum of two Research Grants.

The annual gross salary is €31.308,00, (the net salary according to the regulations in force on 27-06-2023 is €27.600,00. This number might be subject to change).

In order to promote the mobility of researchers, the winners of the scientific research grants who have obtained the Ph.D. in a Province or Metropolitan City other than that where their research grant is seated, will receive an additional economic incentive of €5.000,00 gross year for each year the contract is in force, provided that they are not resident or have not had the residence or scholarships or other research grants paid by the INFN or other scientific institutions in the three years prior to the signing of the contract in the Province or Metropolitan City of the destination.

This condition is verified at the starting of the activity.

Each Research Grant is initially issued for one year and may be extended for a second year.

Applications, in electronic form, must be submitted to INFN not later than November 10th, 2023 (11:59 a.m. CET) through the website https://reclutamento.dsi.infn.it/ In the application the candidates must specify the date of their
Ph.D., the selected research topic(s) and the corresponding INFN site(s) (up to a maximum of two) among those listed in Annex 1, and must include:
- a curriculum vitae;
- a publication list;
- the names and e-mail addresses of three referees, each of them may upload a reference letter not later than November 13th, 2023 (11:59 a.m. CET).

Italian applicants must also specify the foreign institution where they hold a position and must certify that they have been continuously abroad at least since November 10th, 2020.

Candidates will be excluded from participation in this call if they submit their application later than the deadline indicated.

Incomplete applications (lack of information or missing files) will not be considered.

The selection of the candidates will be based on:

1) the candidate’s scientific quality, as shown by his/her CV and his/her track record of results achieved;
2) quality and relevance of the submitted scientific publications to be evaluated taking into account the specific research area and the candidate’s career stage;
3) qualification of the candidate as attested in the submitted reference letters;
4) matching of the candidate’s scientific experience and qualifications with the research topic of the Grant.

For each Research Grant consideration will be given to candidates working in the corresponding specific research topic; however candidates working in other subjects may be also considered.

At the end of the selection process, the results of the selection will be published at INFN website (Job Opportunities – Details of the announcement). Successful candidates will then receive an official communication from the INFN administration offices. The appointed should start their Research Grant not later than November 1st, 2024; however, special requests to defer the starting date can be considered.

Roma, September 11th 2023

RC/ADV

ISTITUTO NAZIONALE DI FISICA NUCLEARE
IL PRESIDENTE
(Prof. Antonio Zoccoli)

1 Documento informatico firmato digitalmente ai sensi della legge 241/90 art. 15 c 2, del testo unico D.P.R. 28 dicembre 2000, n. 445, del D.Lgs. 7 marzo 2005, n. 82, e norme collegate, il quale sostituisce il testo cartaceo e la firma autografa
# Annex I

<table>
<thead>
<tr>
<th>INFN Section or Laboratory</th>
<th>Research Topic</th>
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<tr>
<td>1 Bologna</td>
<td>Probing Cosmology through accurate modelling of non-linear scales</td>
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<tr>
<td>2 Bologna</td>
<td>Dark sectors in connection with heavy neutral leptons, dark matter and phase transitions</td>
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<tr>
<td>3 Firenze</td>
<td>Structural aspects of quantum field theory</td>
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<tr>
<td>4 Genova</td>
<td>Theory and phenomenology of fundamental interactions at present and future particle-physics experiments</td>
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<td>5 Milano Bicocca</td>
<td>Numerical Relativity simulations of neutron star binary mergers</td>
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<tr>
<td>6 Napoli</td>
<td>Scattering Amplitudes, Strings and Dualities</td>
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<td>8 Milano Bicocca – Gruppo Collegato Parma</td>
<td>Theoretical and numerical approaches to the study of the QCD phase diagram</td>
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<td>9 Perugia</td>
<td>Holographic dualities, quantum information and gravity</td>
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<td>10 Pisa</td>
<td>Statistical theory of fields, quantum many-body systems</td>
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<td>11 Pisa</td>
<td>Modelling the equation of state of dense and hot matter for astrophysical applications</td>
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<td>12 Roma Tor Vergata</td>
<td>Aspects of the connections between (super) string theory and gauge theories with applications to phenomenology and cosmology</td>
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<td>13 Torino</td>
<td>Understanding gravity via gauge theories, supergravity and strings</td>
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<td>14 Torino</td>
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<td>15 Trieste</td>
<td>Particle physics phenomenology in the Standard Model and beyond</td>
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