



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

**TRANSLATION OF ANNOUNCEMENT FOR 12 RESEARCH POSITIONS
(Decree no. 110 dated 28.04.11)**

Art. 1

A public selection, based on the evaluation of project proposals and academic qualifications, is hereby announced for 12 research positions in the scientific fields of interest of the International School for Advanced Studies (SISSA) in Trieste as specified in the following art. 2. Admission requirements, the required experiences and the eventual oral examination are specified in the Annex 1, no. 1-12:

List of positions:

Art. 2

- 1) Scientific field of interest: Analog Models of Gravity and Emergent Gravity
Responsible scientist: Prof. Stefano Liberati
Astrophysics Sector
- 2) Scientific field of interest: Extragalactic Astrophysics: quasar surveys
Responsible scientist: Prof. Luigi Danese
Astrophysics Sector
- 3) Scientific field of interest: Noncommutative Geometry
Responsible scientist: Prof. Ludwik Dabrowski
Mathematical Physics Sector
- 4) Scientific field of interest: Algebraic Geometry
Responsible scientist: Prof. Barbara Fantechi
Mathematical Physics Sector
- 5) Scientific field of interest: Motor Neuroscience
Responsible scientist: Prof. Andrea Nistri
Neurobiology Sector
- 6) Scientific field of interest: Nanotechnology applications to Neurobiology
Responsible scientist: Prof. Vincent Torre
Neurobiology Sector
- 7) Scientific field of interest: Protein aggregation
Responsible scientist: Prof. Giuseppe Legname
Neurobiology Sector
- 8) Scientific field of interest: Cognitive Neuroscience
Responsible scientist: Prof. Raffaella Rumiati
Cognitive Neuroscience Sector



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

9) Scientific field of interest: Field Theory
Responsible scientist: Prof. Gesualdo Delfino
Elementary Particle Sector

10) Scientific field of interest: Statistical Physics
Responsible scientist: Prof. Giuseppe Mussardo
Elementary Particle Sector

11) Scientific field of interest: Theory of Fundamental Interactions
Responsible scientist: Prof. Serguey Petcov
Elementary Particle Sector

12) Scientific field of interest: Astroparticle Physics,
Responsible scientist: Prof. Piero Ullio
Elementary Particle Sector

Art. 3

Candidates must be in possession of a scientific-professional curriculum which enables them to carry out research activity and meet the further requirements specified in the Annex 1. Personnel with permanent positions in Italian Universities, Astronomical and Astrophysical Observatories and Public Research Institutions (in accordance to the Italian law DPCM of 30.12.93, art. 8), E.N.E.A. and A.S.I., or in Institutions which confer scientific degrees considered equivalent to PhD (in accordance to the Italian law DPR no. 382/80, art.74) are excluded from applying.

In accordance to the Italian law 240/10, art.18 candidates having a family relationship or other degree of kinship with the following persons are also excluded from applying:

- SISSA Professors belonging to the Sectors which are offering the positions
- Director of SISSA;
- Administrative Director of SISSA
- Member of the Council of Administration of SISSA (see Annex A)

The research fellowship is awarded through a private contract which does not give any right regarding access for employment in the Universities.

Art. 4

The research fellowship is worth Euro 23.760,00 gross per year and includes contributions to be paid by the contractor. The fellowship is paid monthly. The fiscal and social security treatment of the research fellowship is in accordance with Italian law no. 476/84, art.4 and Italian law no. 335/95, art.2, par. 26 and followings. The School provides accident and third-party insurance that covers the research fellow while carrying out research for the School. The insurance premium is deducted from the fellowship.



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

Art. 5

The fellowships cannot be held contemporaneously with other fellowships of whatever kind, except those awarded by Italian or foreign Institutes with the aim of integrating the training or research activity of the fellowship holders through a period abroad. The Senate of the School can authorize fellowship holders to carry out other professional activities if they are compatible with the research position, are not in conflict of interest with the same position and are not prejudicial to the School. Fellowship holders willing to carry out external activity in a continuous way, if compatible with their research assignments, and following a written approval by the scientist responsible for the research project, can participate in research assignments commissioned by SISSA for third parties (in accordance with the art. 66 of the Italian D.P.R. 382/80) and in the division of the earnings coming from this activity, in accordance with the regulations. Fellowship holders can not be enrolled in University Degree courses, PhD courses with fellowship or medical school of specialization in Italy or in a foreign country. The research fellowship holder, who is a State employee, must be given unpaid leave for the period of the fellowship.

Art. 6

The academic requirements for admission to the competitive selection mentioned above on art. 2 are specified in the annex 1, positions 1 to 12. The selection is based on the evaluation carried out on the project proposal submitted to the examining board, as well as on academic qualifications and publications of the applicant. Before the beginning of the evaluations the examining board will define the evaluation criteria for academic qualifications and publications and for the interview, if foreseen. The academic qualifications evaluation criteria, which can be specified by the examining board coherently to international parameters, will value the relevance, the importance and the quality of:

- proven research activity;
- academic titles (University Degree, PhD, specialization degrees or other certificates of attendance regarding post-degree specialization courses in Italy or in foreign countries frequency);
- Other qualifications

The academic qualifications must be relevant with the positions offered or with similar research field and must be in possession of the applicants at the expiry date of the public announcement.

Art. 7

The examining board is nominated by the Director of SISSA, according to the proposal of the concerned Sector Councils. It is composed of a maximum of nine members, each one representative for the scientific field of interest of the positions hereby offered.

At the end of the evaluations the examining board will draw up a report, including the evaluation criteria, the total mark obtained by each candidate and a classification of those considered eligible relevant to each scientific field of interest.

The interview, if any, is normally carried out at SISSA.

Candidates living out of Italy or 500 km far from SISSA can sit a telematic oral examination using workstations located in Universities or Italian diplomatic offices. The identity of the applicants must in this case be certified by the personnel of the workstation or through telematic



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

location. The applicant's identity will be afterwards verified when the contract will be signed. Candidates willing to apply to the telematic procedure must specify it in the application form. The procedure results and the final classification will be approved by Director Decree. The eligible candidate will undertake a research contract with SISSA in accordance with Italian Law no. 240/10, art. 22.

The classification will not give any rights to further procedures.

Art. 8

Applications, which must be consistent with the attached form ("application"), have to be addressed to the Director of SISSA and **must reach the School**, via Bonomea, 265, 34136-Trieste, **no later than May 30, 2011, at 1:00 p.m.**

The application form with the original signature must be sent:

- by registered letter within the term above mentioned; in this case, it will be taken in consideration the date indicated in the stamp by the receiving postal office or
- by fax (no. 0403787240) if accompanied by a copy of a legible and valid identity document or
- by delivery to Human Resources Office (Sissa, Via Bonomea 265 – Trieste, rooms 203-204, second floor).

Applications sent by electronic mail will not be accepted.

In their applications candidates will have to indicate:

1. their full particulars, date and place of birth, home address, the address where they wish to receive communications regarding their application and a telephone number. Changes in this information should be rapidly communicated to the Direction of the School;
2. the scientific field of interest to which the applicant wishes to submit a research project proposal. Who wishes to apply to different positions will have to submit specific applications each accompanied by relevant academic qualifications and publications. No reference to academic qualifications or publications submitted in the present or previous applications is admitted.
3. the Sector of the School and the position for which the candidate is applying;
4. the University Degree obtained, indicating the date it was awarded, the mark obtained and the University which awarded it, the title of the degree thesis and the name of the supervisor;
5. the title of the eventual PhD Degree obtained, indicating the date it was awarded, the University which awarded it, the title of the PhD Degree thesis and the name of the supervisor;
5. any other academic qualifications which prove, in particular for candidates who do not have a PhD Degree, their scientific curriculum.

Candidates will have to include, together with the application, their publications, and a detailed list prepared in accordance with international formats and including all the authors.

SISSA Administration does not assume any responsibility for any missing, late or incomplete transmission of documentation connected to the selection process due to postal, telegraphic or computer problems for which SISSA is not at fault.

SISSA Administration does not assume any responsibility for the loss of correspondence due to an incorrect address indicated by the candidate or due to a late, or lack of communication of



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

address change in the application or mistakes by third parties in delivering correspondence by post or telegram, fortuitous events or reasons of force majeure.

Within three months of the examination, candidates must meet the expenses of the documents retrieved and of the publications submitted. After this period SISSA cannot be held responsible in any way for these documents and publications

Art. 9

After budget verification is carried out, winners will receive notification of the award of the research contract by registered letter. Within 20 days from the above-mentioned communication, they will have to send a declaration of acceptance to the Direction of SISSA. Within 30 days from the beginning of the research activity at SISSA, Italian and European Community candidates or non-European Community citizens resident in Italy will have to send to the Direction of SISSA the following documents:

- A) personal declaration of birth, citizenship and residence or presentation of an identity document not yet expired; non-European Community citizens have to show their passport;
- B) personal declaration and copy of documents attesting: 1) the possession of a PhD Degree or 2) the completion of a three-year PhD course or 3) the possession of a University Degree including the mark obtained and the date in which the degree was awarded or 4) the possession of an equivalent academic qualification;
- C) copy of the fiscal code issued in Italy;

Non-European Community citizens authorized to sojourn in Italy owing to the conventions between Italy and their own country have to send the same over-mentioned documents.

Non-European Community citizens regularly sojourning in Italy can use a substitute declaration exclusively for personal qualities and events certified and attested by public Italian subjects.

In any different case the above stated information have to be documented by a personal declaration and by relative photocopies within 30 days from the beginning of the research activity at S.I.S.S.A. Within 60 days from the beginning of their research activity winners have to produce a declaration concerning the information requested in points A, B and C issued by the foreign competent authorities with a translation in Italian authenticated by the Italian Consulate abroad.

The School reserves the right to verify all personal declarations.

Should a letter of acceptance not be received, or the above documents not be presented in time or a candidate refuse the position, the research fellowship could be offered to the next candidate eligible in the classification list in accordance with a resolution of the Senate of the School. The starting date of the fellowship shall be agreed with the scientist responsible in the Sector for the research fellowship.

Art. 10

The contract holders undertake to carry out research activity as foreseen in the contract and in accordance with the research program of the Sector. The research activity is carried out in the frame of the research project for which the applicant has been selected. Every year the fellowship holders must present a report of the activity carried out in the previous year to the Council of the Sector. In major case of non-compliance the contract can be terminated, by decision of the School Senate and on proposal of the Council of the Sector, heard the counterpart.



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

The contract is automatically resolved in the following cases:

- lack or unjustified delay in the starting of the research activity
- unjustified suspension of the activity for more than 15 days
- serious violation of the incompatibilities established for the award of the research fellowship
- negative evaluation of the research activity expressed by the Council of the Sector

An authorized absence of up to 30 days a year does not require the fellowship to be suspended or the absence to be recuperated at a later date.

At least 30 days of advanced notice must be given in case of resignation, in which case no penalty will be applied.

Art. 11

The total duration of the research fellowship and the eventual renewals must not exceed 4 years with the same person. To this end, the period in which the person has been enrolled in PhD courses (without grant) is not taken into account. In accordance with Italian Law no. 240/10 one person can not be awarded research fellowship or temporary researcher contracts with SISSA or other universities, public, private or telematic nor with other person as specified by art. 1 of the Italian law no. 240/10 for a period exceeding 12 years. To this end the periods of absence due to maternity leave or state of illness are not taken into account.

The research contract renewal is decided by the School Senate and, as for the financial coverage, by the Council of Administration, on the basis of the evaluation of the research activity carried out by the contract holder, the state of the art of the research programme, following request of the scientist responsible in the Sector for the research activity.

Art. 12

SISSA, in accordance with the Italian D.Lgs. 30.06.2003 n.196, undertakes to respect the privacy of all personal data provided by the candidates: all data will be used only for the purposes of the selection and for the drawing up of the relevant contract.

Trieste, 28.04.11



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

Annex 1

POSITION N.1

Scientific field of interest: Analog Models of Gravity and Emergent Gravity

Responsible scientist: Prof. Stefano Liberati

Astrophysics Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Stefano Liberati, Dr. Thomas Sotiriou

s.s.d.: FIS/05 Astronomia ed astrofisica, dell'Area 02 Scienze fisiche

Requirements for the admission to the competitive selection:

- University Degree in Physics ;
- PhD in Physics or Mathematics or
- Proven experience in the field of analog models of gravity;

Further requirements and requested abilities: previous experience in experimental activity in the field of Analog Models of Gravity and Emergent Gravity

Duration of the research fellowship: 24 months, renewable

POSITION N.2

Scientific field of interest: Extragalactic Astrophysics: quasar surveys

Responsible scientist: Prof. Luigi Danese

Astrophysics Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: members of the Astrophysics Sector

s.s.d.: FIS/05 Astronomia ed astrofisica, dell'Area 02 Scienze fisiche

Requirements for the admission to the competitive selection:

- University Degree in Physics or Astrophysics or equivalent foreign degree;
- PhD in Physics or Astrophysics;

Duration of the research fellowship: 24 months, renewable



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

POSITION N.3

Scientific field of interest: Noncommutative Geometry

Responsible scientist: Prof. Ludwik Dabrowski

Mathematical Physics Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Ludwik Dabrowski, Prof. Cesare Reina

Scientific focus of the research activity: Applications of Noncommutative Geometry in Mathematical Physics

s.s.d.: *MAT/07 Fisica Matematica, dell'Area 01 Scienze matematiche e informatiche*

Requirements for the admission to the competitive selection:

- PhD in Mathematics or Physics;
- Previous experience in the field of noncommutative geometry and applications

Duration of the research fellowship: 24 months, renewable

POSITION N.4

Scientific field of interest: Algebraic Geometry

Responsible scientist: Prof. Barbara Fantechi

Mathematical Physics Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Barbara Fantechi, Prof. Ugo Bruzzo

Scientific focus of the research activity: Moduli spaces in Algebraic Geometry

s.s.d.: *MAT/03 Geometria, dell'Area 01 Scienze matematiche e informatiche*

Requirements for the admission to the competitive selection:

- University Degree in Mathematics or Physics;
- Previous experience in the field of moduli spaces in Algebraic Geometry

Duration of the research fellowship: 24 months, renewable



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

POSITION N. 5

Scientific field of interest: Motor Neuroscience

Responsible scientist: Prof. Andrea Nistri

Neurobiology Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Andrea Nistri, Dr. Miranda Mladinic, Dr. Graciela Luján Mazzone, Dr. Cynthia Samano

Scientific focus of the research activity: pathophysiological mechanism of neuronal dysfunctional

s.s.d.: *BIO/14 Farmacologia, dell'Area 05- Scienze biologiche*

Requirements for the admission to the competitive selection:

- PhD in Biomedical Sciences or related subjects;
- Previous experience in experimental biological sciences

Further requirements and requested abilities: previous laboratory research training

Duration of the research fellowship: 12 months, renewable

POSITION N.6

Scientific field of interest: Nanotechnology applications to Neurobiology

Responsible scientist: Prof. Vincent Torre

Neurobiology Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Vincent Torre, Dr. Alejandro Valbuena, Dr. Alessio Ansuini, Dr. Erika Ercolini, Dr. Akbar Samadi, Dr. Ladan Amid, Dr. Wasim Amin Sayyad

Scientific focus of the research activity: Nanotechnology applications to neuronal differentiation

s.s.d.: *BIO/09 Fisiologia, dell'Area 05 Scienze biologiche*

Requirements for the admission to the competitive selection:

- University Degree in biological sciences;
- PhD in genomics or neuroscience;
- Previous experience in the field of bionanotechnology and neuronal cultures

Duration of the research fellowship: 12 months, renewable



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

POSITION N.7

Scientific field of interest: Protein aggregation

Responsible scientist: Prof. Giuseppe Legname

Neurobiology Sector of SISSA

Selection procedure: academic qualifications and interview

Members of the research group: Dr. Federico Benetti, Dr. Federica Agostini

Scientific focus of the research activity: Neurobiology

s.s.d.: *BIO/09 Fisiologia, dell'Area 05 Scienze biologiche*

Requirements for the admission to the competitive selection:

- PhD in molecular genetics or molecular biology;
- Previous research laboratory experience

Duration of the research fellowship: 12 months, renewable

Interview date: June 14th, 2011 at 11.00 am (Room 4, ground floor, SISSA, Via Bonomea, 265 - 34136 Trieste. Any variations should intervene in this schedule, the applicants will receive an e-mail communication.

POSITION N.8

Scientific field of interest: Cognitive Neuroscience

Responsible scientist: Prof. Raffaella Rumiati

Cognitive Neuroscience Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: members of the Cognitive Neuroscience Sector

Scientific focus of the research activity: collaboration in defining experimental details, testing patients, analyzing behavioral and neuroradiological data

s.s.d.: *M-PSI/02 Psicobiologia e psicologia fisiologica, dell'Area 11 Scienze storiche, filosofiche, pedagogiche e psicologiche*

Requirements for the admission to the competitive selection:

- Master Degree in Psychology or Neuroscience or Medicine or Cognitive Science;
- Previous experience in Neuropsychology and/or Neuroimaging

Duration of the research fellowship: 24 months, renewable



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

POSITION N.9

Scientific field of interest: Field Theory

Responsible scientist: Prof. Gesualdo Delfino

Elementary Particle Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Gesualdo Delfino, Giuseppe Mussardo

Scientific focus of the research activity: Integrable Field theory and applications

s.s.d.: FIS/02 Fisica teorica, modelli e metodi matematici, dell'Area 02 Scienze fisiche

Requirements for the admission to the competitive selection:

- PhD in Theoretical Physics or Mathematics;
- Previous experience in integrable systems, scattering matrix, methods for bootstrap, symmetric systems under PT

Further requirements and requested abilities: proven experience in the field of integrable quantum systems, exact methods for bidimensional systems, non-perturbative techniques

Duration of the research fellowship: 24 months, renewable

POSITION N. 10

Scientific field of interest: Statistical Physics

Responsible scientist: Prof. Giuseppe Mussardo

Elementary Particle Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Giuseppe Mussardo. Dr. Andrea Gambassi

Scientific focus of the research activity: Quantum quenches in extended systems

s.s.d.: FIS/02 Fisica teorica, modelli e metodi matematici, dell'Area 02 Scienze fisiche

Requirements for the admission to the competitive selection:

- PhD in Theoretical Physics;
- Previous experience in Non-equilibrium Physics

Further requirements and requested abilities: Expertise in Conformal Field Theory, Boundary Coherent States, general knowledge of out-of-equilibrium physics and perturbed quantum systems

Duration of the research fellowship: 12 months, renewable



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

POSITION N.11

Scientific field of interest: Theory of fundamental interactions

Responsible scientist: Prof. Serguey Petcov

Elementary Particle Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Andrea Romanino and his research group, two post-doc researchers and two students of the Elementary Particles Sector

Scientific focus of the research activity: Theories of Neutrino Masses, Mixing, Oscillations and Leptogenesis and their Experimental Tests

s.s.d.: FIS/02 Fisica teorica, modelli e metodi matematici, dell'Area 02 Scienze fisiche

Requirements for the admission to the competitive selection:

- University Degree in Theoretical Physics;
- Previous experience in the field of theories of Neutrino Masses, Mixing, Oscillations and Leptogenesis and their Experimental Tests

Duration of the research fellowship: 24 months, renewable

POSITION N. 12

Scientific field of interest: Astroparticle Physics

Responsible scientist: Prof. Piero Ullio

Elementary Particle Sector of SISSA

Selection procedure: academic qualifications

Members of the research group: Prof. Serguey Petcov, Prof. Andrea Romanino, Prof. Marco Serone

Scientific focus of the research activity: Physics beyond the Standard Model: supersymmetric theories and leptons

s.s.d.: FIS/02 Fisica teorica, modelli e metodi matematici, dell'Area 02 Scienze fisiche

Requirements for the admission to the competitive selection:

- University Degree in Physics;
- Previous experience in the field of supersymmetric theories and leptons

Duration of the research fellowship: 24 months, renewable



SCUOLA INTERNAZIONALE SUPERIORE DI STUDI AVANZATI

Annex A

ASTROPHYSICS SECTOR

PROFESSORS (<i>PRIMA FASCIA</i>)	PROFESSORS (<i>SECONDA FASCIA</i>)	RESEARCHER
Prof. Anna Lisa Celotti	Prof. Carlo Baccigalupi	Dr. Antonio Lanza
Prof. Luigi Danese	Prof. Stefano Liberati	Dr. Roberto Percacci
	Prof. John Miller	Dr. Francesca Perrotta
	Prof. Paolo Salucci	Dr. Riccardo Valdarnini

MATHEMATICAL PHYSICS SECTOR

PROFESSORS (<i>PRIMA FASCIA</i>)	PROFESSORS (<i>SECONDA FASCIA</i>)	RESEARCHER
Prof. Ugo Bruzzo	Prof. Ludwik Dabrowski	Dr. Davide Guzzetti
Prof. Boris Dubrovin	Prof.a Tamara Grava	
Prof Barbara Fantechi	Prof. Alessandro Tanzini	
Prof. Cesare Reina		

NEUROBIOLOGY SECTOR

PROFESSORS (<i>PRIMA FASCIA</i>)	PROFESSORS (<i>SECONDA FASCIA</i>)	RESEARCHER
Prof. Enrico Cherubini	Prof. Stefano Gustincich	Dr. Giuliano Taccola
Prof. Anna Maria Menini	Prof. Giuseppe Antonio Legname	
Prof. Andrea Nistri	Prof. Antonio Mallamaci	
Prof. Vincent Torre		

COGNITIVE NEUROSCIENCE SECTOR

PROFESSORS (<i>PRIMA FASCIA</i>)	PROFESSORS (<i>SECONDA FASCIA</i>)	RESEARCHER
Prof. Mathew Diamond	Prof. Raffaella Rumiati	
Prof. Alessandro Treves		

ELEMENTARY PARTICLES SECTOR

PROFESSORS (<i>PRIMA FASCIA</i>)	PROFESSORS (<i>SECONDA FASCIA</i>)	RESEARCHER
Prof. Lorianò Bonora	Prof. Matteo Bertolini	Dr. Giulio Bonelli
Prof. Roberto Inigo	Prof. Sergio Cecotti	
Prof. Giuseppe Mussardo	Prof. Gesualdo Delfino	
Prof. Serguey Petcov	Prof. Andrea Romanino	
	Prof. Marco Serone	
	Prof. Piero Ullio	

SISSA Director:

SISSA Administrative Director :

Member of SISSA Council of Administration :

Prof. Guido Martinelli

Dr. Luca Bardi

SISSA Director – Prof. Guido Martinelli

Prof. Gianni Dal Maso

Administrative Director - Dr. Luca Bardi

Prof. Sergio Cecotti

Prof. Anna Maria Menini

Prof. Giuseppe Mussardo

Prof. Cesare Reina

Dr. Vera Breda

Dr. Jamir Marino

Dr. Alessandra Cifra

Prof.. Rinaldo Rui

Fabio Fratnik

Prof. Giorgio Rossi

Prof. Claudia Razza