ASTROPHYSICS

Section “PhD positions and scholarships” integrated on 13/06/2019

Coordinator
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Starting date of the PhD Programme
01/11/2019

Duration
3 calendar years

Language of the PhD Programme
English

Mandatory stay abroad
Yes (3 months)

Associated partners pursuant to art. 2, para 2, lett. a) of the M.D. n. 45/2013
Istituto Nazionale di Astrofisica (INAF)

Research topics
- Stellar populations in the Local Group
- Populations, chemistry and dynamics of stellar clusters
- Stellar and chemical evolution of galaxies
- Formation and evolution of galaxies and AGN
- Radioastronomy
- High energy astrophysics
- Astronomical technology
- Galactic dynamics
- Galaxy Clusters, large-scale structure of the Universe, Cosmology

PhD positions and scholarships

<table>
<thead>
<tr>
<th>Position n.</th>
<th>Financial support</th>
<th>Description</th>
<th>Positions linked to research subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PhD Scholarship</td>
<td>Totally funded by the University of Bologna general budget</td>
<td></td>
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<td>2</td>
<td>PhD Scholarship</td>
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<tr>
<td>4</td>
<td>PhD Scholarship</td>
<td>Funded by the University of Bologna general budget and cofinanced by the Physics and Astronomy Department</td>
<td></td>
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<tr>
<td>5</td>
<td>PhD Scholarship</td>
<td>Totally funded by the Istituto Nazionale di Astrofisica (INAF)</td>
<td>Topics of interest to INAF</td>
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<td>7</td>
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<td>Topics of interest to INAF</td>
</tr>
<tr>
<td>8</td>
<td>PhD Scholarship</td>
<td>Financed by the Department of Physics and Astronomy through an agreement with INAF-Observatorio di Astrofisica e Scienza dello Spazio of Bologna and with funds from the ERC Magcow Project</td>
<td>Detecting the cosmic web in radio bands and X-ray</td>
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<tr>
<td>9</td>
<td>PhD Scholarship</td>
<td>Financed by the Department of Physics and Astronomy with funds from the ERCCOSMIC-COSMIC LAB Project</td>
<td>Cosmic-Lab: globular clusters as cosmic laboratories for astro-archeology and multi-body dynamics</td>
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</tbody>
</table>

Positions linked to specific research subjects: during the oral examination, applicants may express their interest in one or more positions linked to specific research subjects. Considering the expressions of interest above, the Admission Board shall express its view on the suitability of the interested applicants, taking into account their specific skills, experience and aptitude.

Admission requirements
Please, see art. 2 of the Call for applications

Mandatory documents to be attached to the application
Further qualifications that may be attached to the application, if in possession of the applicant (only qualifications attested by documents drawn up in Italian, English, French and German and Spanish shall be considered as valid and assessed by the Admission Board)

- Abstract of the second cycle master’s degree thesis. Undergraduate applicants may submit the draft of the thesis approved by their supervisor (please, note that abstracts cannot exceed 5,000 characters, including spaces and formula possibly used. The above figure does not include: the title of thesis, the outline, and images such as graphs, diagrams, tables etc. - where present);
- No more than 2 reference letters signed by Italian and international academics and professionals in the research field, which do not form part of the Admission Board, attesting the suitability of the applicant and his/her interest for the scientific research. Please, note that the above letters cannot be uploaded by applicants. When filling the online application form on http://studenti.unibo.it, applicants will be only allowed to provide the email accounts of the requested academic/professional. The latter shall receive an email from the University of Bologna providing for the instructions for uploading. Only letters in pdf format submitted before the expiry date and time of the Call shall be accepted.
- List of the publications (monographs, articles published on scientific journals book’s chapters).
- List of the minor publications (conference papers, etc.).
- List of the abstracts and posters presented during national and international conferences, etc.
- Study periods completed by students outside their countries of origin (e.g. Erasmus programme or other similar mobility programmes).
- Other qualifications attesting the suitability of the applicants (scholarships, prizes, etc).

Admission exams (art. 4 of the call for applications)

<table>
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<tr>
<th>Examination type</th>
<th>Schedule (please, note that applicants shall not receive any communication concerning the exams schedule)</th>
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<tbody>
<tr>
<td>Evaluation of qualifications</td>
<td>Non-presentational.</td>
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<tr>
<td>Oral examination</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>01/07/2019</td>
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<tr>
<td>Place</td>
<td>Bologna - Via Gobetti 93/2 – Navile Dipartimento di Fisica e Astronomia</td>
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<tr>
<td>Time</td>
<td>9 a.m.</td>
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The results of the oral examination shall be available on the webpage http://studenti.unibo.it starting from 05/07/2019 (please, select “summary of the requests in progress” - “see detail” and open the pdf file “risultati prova orale”)

Applicants can ask to take the exam remotely using Skype. For further details please refer to the relevant provision laid down in art. 4 of the Call for applications.

Points will be allocated to applications out of a total of 100 on the basis of the following weighting:

1. Qualifications
   - Minimum for admission to the oral exam: 30 points
   - Maximum: 50 points
   Only qualifications relating to the last 5 calendar years prior to the calendar year of publication of the Call for applications shall be taken into consideration, with the exception of the University Degree (Diploma di laurea). Please, note that qualifications must be consistent with the PhD Programme.
   - Graduation final mark. Undergraduates shall be evaluated on the basis of the Weighted Average Mark (WAM): max 30 points
   - Publications: max 5 points
   - CV evaluation (thesis abstract, reference letters, other qualifications): max 15 points

2. Oral examination
   - Minimum for inclusion in the final ranking list :30 points
   - Maximum: 50 points
   Oral examination is intended to assess the suitability of the applicant in respect of the pursuing of scientific research as well as the general knowledge of issues connected to the PhD Programme.
During the oral examination, knowledge of the following foreign languages shall be assessed: English.
The oral examination is carried out in Italian or in English.
Points relating to the oral examination shall be allocated on the basis of the following criteria:
- general knowledge of Physics and Astrophysics fundamental issues: max 20 points
- thorough knowledge and ability to discuss with a critical eye about issues pertaining to the Master’s degree
dissertation: max 20 points
- clarity in argumentation: max 10 points
Possible evaluation sub-criteria will be available on the Unibo website, selecting the relevant PhD Programme → “PhD
programme information” at the bottom of the page in the section “Notices”.

<table>
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<th>Final ranking list and enrolment (arts.6 and 7 of the Call for applications)</th>
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<tr>
<td>After the publication of the results of the oral exam, the final ranking list will be available on the Unibo website, selecting the relevant PhD Programme → “PhD programme information” at the bottom of the page in the section “Notices”. Following the publication of the final ranking list, successful applicants must enroll on <a href="http://studenti.unibo.it">http://studenti.unibo.it</a> by the deadline indicated on the Unibo website, selecting the relevant PhD Programme → “PhD programme information”</td>
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