



## Three doctoral students in Theoretical Particle Physics

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### Lund University, Faculty of Science, Department of Astronomy and Theoretical Physics

Lund University was founded in 1666 and is regularly ranked as one of the world's top 100 higher education institutions. The University has 41 000 students and 7 500 staff based in Lund, Helsingborg and Malmö. We are united in our efforts to understand, explain and improve our world and the human condition.

The Faculty of Science conducts research and education within Biology, Astronomy, Physics, Geosciences, Chemistry, Mathematics and Environmental Sciences. The Faculty is organized into ten departments, gathered in the northern campus area. The Faculty has approximately 1900 students, 330 PhD students and 700 employees.

The activities of the Department of Astronomy and Theoretical Physics are centred around three main areas: Astronomy and Astrophysics; Theoretical Particle Physics; and Computational Biology and Biological Physics. Our research is driven by our curiosity to understand reality, from the smallest of particles to the largest astronomical structures, as well as the structure of Life itself. We have a strong international position in all three areas, and we are actively working on further strengthening our international profile.

#### Job Assignments

The successful applicants will work on some of the research topics pursued by the senior members of the group within the framework of the EU funded network MCnet (see <http://www.montecarlonet.org>). The topics involve phenomenological studies of the Standard Model and beyond, concentrating on computer modeling of processes that can be studied experimentally eg. at the LHC.

The Lund group has here been very successful, with the PYTHIA event generator in heavy use by all LHC experiments, and other generators such as Dipsy pioneering new approaches to understand high-energy collisions. Likely projects for the future include further developments of minimum-bias physics in pp collisions, improved extensions to and new aspects of pA and AA heavy-ion collisions, and improved matching and merging between matrix elements and parton showers.

Supervisors will be appointed at the beginning of the studies, and integrate each student in their ongoing research. The focus may shift as new topics of interest appear; particle physics is a dynamical field and results e.g. from the LHC collider may inspire new research projects. The students are also expected to take a number of courses in theoretical physics, see <http://home.thep.lu.se/~bijnens/PhD/> and [http://www.science.lu.se/sites/science.lu.se/files/syllabi\\_theoretical\\_physics.pdf](http://www.science.lu.se/sites/science.lu.se/files/syllabi_theoretical_physics.pdf), and may be required to perform a modest amount of other duties, such as teaching and administration, according to the specific regulations.

#### Eligibility/Entry Requirements

According to the mobility rules of the Marie Curie Initial Training Networks, the candidate must not have resided, worked or studied in Sweden for more than 12 months in the 3 years immediately prior to her/his recruitment.

The position is open to students of all nationalities who fulfill the basic and special eligibility demands in the study plan [http://www.science.lu.se/sites/science.lu.se/files/syllabi\\_theoretical\\_physics.pdf](http://www.science.lu.se/sites/science.lu.se/files/syllabi_theoretical_physics.pdf). In brief the requirements are that the student, at the time of starting the PhD studies, have completed a master degree in physics or theoretical physics, alternatively have completed a bachelor degree, plus an additional full year of advanced-level physics of theoretical physics, i.e. a total of at least four years of full-time University studies (240 ECTS credits), or have obtained equivalent qualifications in Sweden or abroad. Detailed rules can be found at <http://www.science.lu.se>

/education/phd-studies

Fluent spoken and written English is required.

### **Basis of Assessment**

Regulations concerning appointment as a full PhD student can be found in HF 5 Chap 1-7§§ and SFS 1998:80. Those who hold a doctoral student appointment must first be accepted for postgraduate study. To be accepted, a student must be judged to have the competence necessary to complete a PhD during the tenure of the appointment. Among candidates, a ranking will be based on grades, the quality of undergraduate theses, if any, letters of recommendation, other relevant information provided, and ultimately (phone) interviews. Previous courses and project work in particle physics is an advantage. Experience with scientific programming in a Unix/Linux environment is also a merit, especially familiarity with C++.

### **Application Procedure**

Owing to the nature of the positions, you must apply on two places.

Firstly, using the recruitment system of Lund University <http://www.lunduniversity.lu.se/erek/category/D> On the linked page to the current positions click on the "Login and apply" button and follow instructions. Applications instead sent directly to one of the group members cannot be considered.

Secondly, the application form on the MCnet web page <http://www.montecarlonet.org/index.php?p=Studenthips/application> must also be filled out. If you already did that for another position within MCnet you do not need to do it again.

Applications should include a curriculum vitae, a description of research interests and past experience, copies of degrees, diplomas and grades, and copies of any previous research-related work. The CV should contain at least date and place of birth, nationality, address, education, and language skills, but may also contain e.g. additional skills, personal interests, honors and awards, teaching experience, conference and summer school participation, and publication lists. Upon request the applicants must be able to show original documents of degrees etc.

The application should also include the names, positions, telephone numbers and e-mail addresses of at least two persons who have agreed to serve as a reference for the applicant. They need not send letters until contacted, but if they do, letters should be sent by e-mail directly to [leif.lonnblad@thep.lu.se](mailto:leif.lonnblad@thep.lu.se).

We kindly decline all sales and marketing contacts.

Lund University welcomes applicants with diverse backgrounds and experiences. We regard gender equality and diversity as a strength and an asset.

<b>Type of employment</b>	Temporary position longer than 6 months
<b>First day of employment</b>	September 1, 2017 or by agreement
<b>Salary</b>	Monthly salary
<b>Number of positions</b>	3
<b>Working hours</b>	100 %
<b>City</b>	Lund
<b>County</b>	Skåne län
<b>Country</b>	Sweden
<b>Reference number</b>	PA2017/609
<b>Contact</b>	Leif Lönnblad, Professor, +46-46-2227780, <a href="mailto:leif.lonnblad@thep.lu.se">leif.lonnblad@thep.lu.se</a>
<b>Union representative</b>	OFR/ST:Fackförbundet ST:s kansli, 046-222 93 62, <a href="mailto:st@st.lu.se">st@st.lu.se</a> SACO:Saco-s-rådet vid Lunds universitet, 046-222 93 64, <a href="mailto:kansli@saco-s.lu.se">kansli@saco-s.lu.se</a>
<b>Published</b>	01.Mar.2017
<b>Last application date</b>	31.Mar.2017 11:59 PM CET

Lunds universitet is using Varbi recruitment system in the recruitment process.

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