



CALL FOR APPLICATIONS for a Marie Skłodowska-Curie Early-Stage Researcher position at LIP- Lisbon

with the AMVA4NewPhysics ITN
(H2020-MSCA-ITN-2015, proposal 675440)

Lisbon, October 29th 2015 - The Laboratório de Instrumentação e Física Experimental de Partículas (LIP) is a beneficiary partner of a Marie Skłodowska Curie European Action Innovative Training Network (MSCA ITN) titled "*Advanced Multivariate Analysis for New Physics Searches at the Large Hadron Collider*" (AMVA4NewPhysics). The network is led by the Italian National Institute for Nuclear Physics research (INFN) and includes 13 other institutions:

- Beneficiary partners: Università di Padova; University of Oxford; Laboratório de Instrumentação e Física Experimental de Partículas at Lisbon; Blaise Pascal University; Université Catholique de Louvain; Institute of Accelerating Systems and Applications, University of Athens; Centre Europeen pour la Recherche Nucleaire - CERN;
- Other partners: University of California Irvine, Ecole Polytechnique Fédérale de Lausanne, B12-consulting, SDG group, Yandex, and Mathworks.

In the next 12 months the beneficiary partners will be hiring ten early-stage researchers (ESR) to study the Higgs boson and search for new physics at the Large Hadron Collider, employing advanced statistical learning tools.

Description

The Lisbon section of LIP offers **one** ESR position in the network. The selected candidate will participate in the research program of AMVA4NewPhysics, performing data analysis in collaboration with the Lisbon members of the CMS experiment at CERN. The research topic envisioned for the ESR, who will be hired by LIP with a 36-months full-time contract, focuses on the detailed study of the Higgs boson using advanced Machine Learning methods for signal extraction and measurements. Optionally, the ESR will be enrolled in the Ph. D. programme offered by the Instituto Superior Técnico (Lisbon).

AMVA4NewPhysics foresees a very rich training programme for the ESR, which includes the participation to international doctoral schools, workshops, and conferences, as well as visiting periods to CERN and to other European institutions belonging to the Network, plus a three-month secondment at a non-academic institution, attending a stage centred on industry applications of Machine Learning tools.

We strongly encourage applications from female students and researchers as AMVA4NewPhysics applies affirmative-action measures to ensure gender equality in the recruitment process.

Conditions

The gross salary amounts to euro 2771.01 per month; in addition, a gross mobility allowance of euro 600 per month is provided for, as well as a gross family allowance of euro 500 per month if applicable.

All expenses related to travel to schools, workshops, and network-organized events, as well as the cost of the optional doctoral courses, will be planned and sustained by the network. The ESR will be provided with office space at the Lisbon offices of LIP, and access to a cluster of computers for his or her research work.

Eligibility criteria

There are strict eligibility requirements for the ESR positions in MSCA-ITN. Please ensure to be qualified before applying, as ineligible candidates cannot be considered.

- Applicants should **not** have resided or performed their main activity (work, studies, etc) in Portugal for more than 12 months in the period December 1st, 2012 to November 30th, 2015 (short stays such as holidays are not taken into account).
- Applicants should be in the first 4 years (full-time equivalent) of their research careers and should not have been awarded a doctorate yet. This 4 year period is measured from the date of obtaining the degree which would formally entitle to embark on a doctorate.
- **At the time of hiring** applicants must have acquired an at least four year full-time University education degree in Physics, formally enabling them to embark in a doctorate program in the country where the degree was obtained or in Portugal.

How to apply

Applications must be sent **by December 31st, 2015 at 17:00 central European time** to the email address **amva4newphysics@lip.pt** as follows:

1) an email with an attached zip folder including:

- A **signed** application form filled according to the format available at http://www.pd.infn.it/AMVA4NewPhysics/calls/LIP_application_form.pdf (also available in Word document format at http://www.pd.infn.it/AMVA4NewPhysics/calls/LIP_application_form.odt)
- A scanned copy of a valid identification document (Passport or ID card)
- A copy of education certificates and transcripts of records
- A copy of the degree thesis and publications (if any), or hyperlinks to pdf files of those documents

Subject of the email should be: FIRST NAME FAMILY NAME APPLICATION (e.g. "JOHN DOE

APPLICATION")

The total size of emails to the above address cannot exceed 10 megabytes. If the provided material does not fit in 10 megabytes, candidates are allowed to submit it in multiple emails.

2) Two letters of recommendation must be sent to the above address by the same deadline, in a separate email directly by the referees of choice of the candidate. Subject of the email should be: FIRST NAME FAMILY NAME LETTER OF REFERENCE (e.g. " JOHN DOE LETTER OF REFERENCE")

Selection criteria

The ESR will be selected on the basis of the following criteria (in random order):

- Recommendation letters
- Topic, content, and score of evaluation of the degree thesis
- Curriculum of studies and research, as detailed in the application form
- Publications (if any)
- Interview (to be defined after pre-selection)

Deadline and timeline

1. Complete applications must be sent by **December 31st 2015 at 5PM central European time**. Incomplete applications or applications sent after the above deadline will not be considered.
2. A selection board will evaluate the applications and make a pre-selection of the most promising candidates based on the requirements above
3. The preselected applicants will be contacted to arrange for an interview which will be held by videoconference.
4. Candidates will be notified of their ranking on the day after the end of all scheduled interviews. The best scoring candidate available to accept the position will be chosen.
5. **The selected ESR will be required to move to Lisbon in April 2016 or before, to formally take service at LIP-Lisbon.**

Further information and contact

Applicants should follow the #AMVA4NP twitter hashtag and the web site of the network at <http://www.pd.infn.it/AMVA4NewPhysics/index.html> for further announcements and notices. For clarifications please contact prof. João Varela at the following address: joao.varela@cern.ch

