Two PhD Positions ERC-COG-RECEPT in the LHCb experiment @ LPNHE Paris

December 19th, 2019

The LHCb group of the Laboratoire de Physique Nucléaire et des Hautes Energies (LPNHE) in Paris (France): https://lpnhe.in2p3.fr/ invites applications for two Doctoral Student positions funded by the ERC-COG project RECEPT (GA 724777) to work on the LHCb experiment.

The LHCb experiment at CERN is collecting data from the proton-proton collisions delivered by the Large Hadron Collider. The LPNHE LHCb group consists of seven permanent staff, three PhD students, and two postdocs, and is currently involved in two main domains of data analysis, the study of charmless three body $B$ decays and rare decays. We also participate enthusiastically in detector development, and are heavily involved in the upgrade of LHCb’s real-time analysis (trigger) system and the construction and commissioning of the new Scintillating Fibre tracker for the LHCb upgrade. In addition, we have proposed a new detector, CODEX-b, to augment LHCb’s sensitivity to long-lived particles beyond the Standard Model (SM), and are leading the construction of a prototype called CODEX-β, to be installed in 2021/2022.

You will both play a leading role in testing lepton universality in $b\to s\ell\ell$ or $b\to c\ell\nu$ transitions, and make a significant contribution to the development of the data processing for the upgraded LHCb detector or to the construction and operation of the CODEX-β prototype. The upgrade of the LHCb detector and its real-time processing are some of the biggest data challenges in science today, requiring the real-time reconstruction of 5 TB/s of data and the reliable application of thousands of processing algorithms to this data in order to cover the full breadth of LHCb’s physics programme. If you work within RTA you will learn how to write high-performance code for parallel processing architectures and how to deploy DevOps methods to ensure you deliver production-ready code in a timely manner. If you work on CODEX-β you will participate in the construction and deployment of a new generation of Resistive Plate Chambers, and will lead a data-driven measurement of SM signals and backgrounds which will guide the design of the full CODEX-b detector.

To qualify, you should have, or be about to obtain, a Master’s degree in Physics. Please submit a two-page CV, a one-page statement explaining your interest in the position, and arrange for two letters of recommendation to be submitted by email. Applications will be accepted until March 15th 2020. If successful you will be enrolled in the STEP’UP (“Sciences de la Terre et de l’Environnement et Physique de l’Univers, Paris”) doctoral school, and will be funded for exactly three years. You will have access to a dedicated travel budget and there is the possibility of a 6-12 month stay at CERN during the course of the project. Additionally, you will normally be expected to make short trips to CERN for data-taking activities and meetings.

No nationality restrictions apply to this position, and members of marginalised groups are particularly encouraged to apply.

For further information contact Vava Gligorov (vgligorov@lpnhe.in2p3.fr). Application documents and references should be sent to the same address.