

Postdoctoral Fellowship at the LPC Clermont

The Theory Group of the Laboratoire de Physique de Clermont-Ferrand (LPC), opens a call for applications concerning a **two-year postdoctoral position**.

The fellowship is funded by the CNRS IN2P3 (Institut National de Physique Nucléaire et de Physique des Particules), for a duration of **two years**, starting in the **Fall 2023** (no later than 01/10/2023).

The appointment is foreseen in the area of particle physics phenomenology; applicants with an expertise on BSM phenomenology, flavour physics (leptons & quarks) and neutrino physics are invited to apply. At the starting date, applicants should already have their **Ph.D.** and preferably some postdoctoral experience (up to 3 years).

Profile

Missions

Flavour physics (at the interface between searches at high-energy colliders and at the so-called high intensity frontier) offers a unique window into phenomena that reveal the presence of new physics beyond the Standard Model of particle physics. The discovery of neutrino masses and that flavour is violated in the lepton sector opens several questions about the most promising extensions of the SM. In addition, several experimental hints suggest the violation of the universality of lepton flavours. In parallel, important experimental progress is expected in the context of numerous experiments dedicated to the physics of flavours (leptonic and hadronic).

The successful candidate is expected to work on the **phenomenology of flavour physics** in the leptonic sector, as well as in the interface of the hadronic and leptonic sectors, also considering possible articulations with models of neutrino mass generation (and associated cosmological aspects).

Activities

- Phenomenological study of new physics models (lepton and hadronic flavour physics) including models of neutrino mass generation;
- Development and study of observables sensitive to lepton flavour violation and/or lepton flavour universality violation; prospects for dedicated experiments (high intensity and colliders);
- Development of numerical tools (public and specialised codes);
- Collaboration with group members and external collaborators, supervision of trainees (master internships).

Skills

- Ph.D. thesis in theoretical physics (post-doctoral experience will be appreciated);
- Strong skills in particle phenomenology, SM and beyond (new physics models or EFT);
- Programming (python) and statistical analysis skills; experience in implementing public codes (global fits);
- Strong interest in experimental progresses in flavour physics and dedicated experiments
- Good command of the English language (spoken and written);
- Ability to work independently;
- Good interpersonal skills and team spirit.

Working context

The LPC Clermont is a joint research unit of CNRS-IN2P3 and of the University of Clermont-Auvergne. The LPC is structured in several poles: two poles concerning fundamental research on the structure of matter, fundamental interactions and cosmology (including teams working on ATLAS, ALICE, LHCb and LSST, as well as on COMET and Solid), a theory pole, and a fourth pole dedicated to physics related to health or the environment. The LPC has an average staff of 150 (including researchers, university professors, engineers and technicians, as well as fixed-term contracts, postdoctoral researchers and Ph.D. students). There are opportunities for a theoretician in a university which recognises the Mathematics-Physics axis as one of its core policy strengths, with the recent creation of a Graduate track and a double-degree formation.

The postdoc will be assigned to the Theoretical Physics group, currently composed of 5 permanent members and one Ph.D. student, and will be placed under the direct hierarchical authority of the team leader.

The interests of the LPC Theory Team include physics beyond the Standard Model, flavour physics (hadronic and leptonic), dark matter and field theory. The group maintains good connections with experimental groups at the LPC, in particular LHCb, Future Colliders, COMET and also in the CKMFitter collaboration.

Application procedure

Applications including a CV, a research statement and list of publications should be submitted **exclusively** via the **CNRS portal**

<https://emploi.cnrs.fr/Offres/CDD/UMR6533-ANATEI-002/Default.aspx?lang=EN>

open from October 27th to December 8th, 2022.

Applicants should also arrange for **3 letters of reference** to be submitted, before December 8th 2022, to the address

postdoc.th-lpc@clermont.in2p3.fr

indicating in the subject line "**Postdoc TH 2022**", as well as the **name** of the applicant.

(We notice that will follow the "Theoretical High Energy Physics Groups Common Deadline for Postdoc Offers" agreement.)

More information on **CNRS job portal** <https://emploi.cnrs.fr/default.aspx>

Contact and further information:

postdoc.th-lpc@clermont.in2p3.fr

indicating in the subject line "**Postdoc TH 2022 - info**"