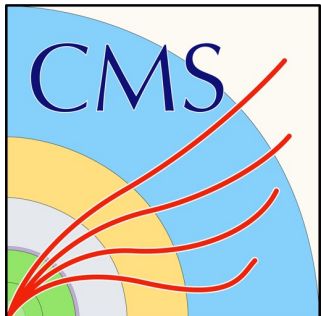


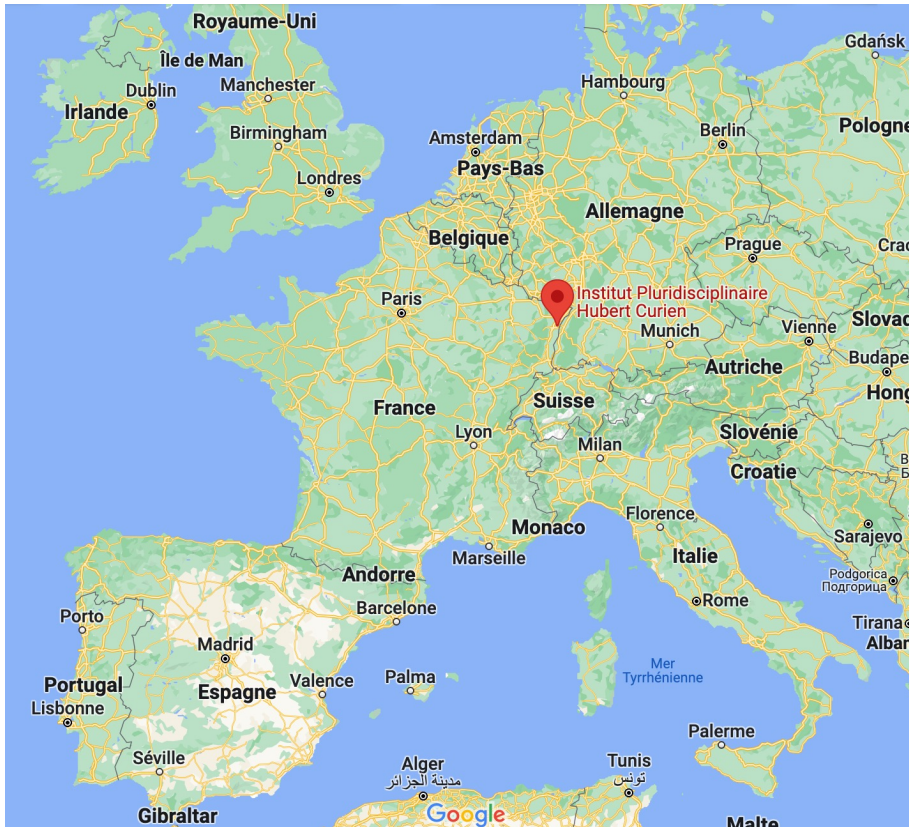
Postdoctoral position in CMS at IPHC Strasbourg

[Details and application here](#) (⚠ dead line : May, 15)

Contact : eric.chabert@iphc.cnrs.fr and caroline.collard@iphc.cnrs.fr



The city: Strasbourg, in France



Strasbourg is the 7th biggest French city.

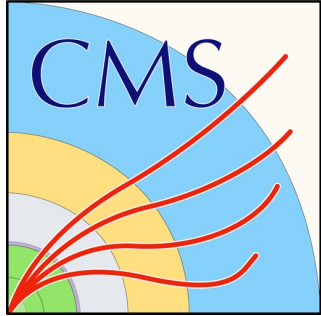
It holds the European parliament
→ a friendly international environment

It is only at 4h30 from Geneva, by train.

Our laboratory: Institut Pluridisciplinaire Hubert Curien

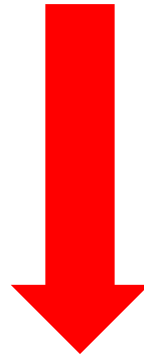
<https://iphc.cnrs.fr/>

- A joint research unit under the joint supervision of CNRS and the University of Strasbourg,
- A multidisciplinary laboratory where research teams from different scientific cultures (ecology, physiology and ethology, chemistry and subatomic physics) develop very high level programs based on scientific instrumentation.
- Structured into 4 departments
- A total staff of ~400 staff including ~250 permanent staff (researchers and teachers / researchers and technicians), ~50 staff on fixed-term contracts and ~100 doctoral students. About ~200 people working on particle and nuclear physics.
- Tier2 infrastructure.
- Local cyclotron, called Cyrcé, providing 25 MeV proton beam



Our Team: CMS

- 12 researchers, 5 doctoral students and 10 engineers
- Key role in the the development, installation and commissioning of the CMS Phase0 tracker, large involvement in the Phase2 tracker too.
- Responsibilities hold today by the group in the upgrade of the tracker in view of the High-Luminosity phase of the LHC (HL-LHC), and identification of tau leptons.
- Physics activity: searches for CP violation in the tau Yukawa coupling, displaced top quarks and Heavy Stable Charged Particles (HSCP) as predicted by new physics scenarios.



2-years postdoctoral position to work on

- Heavy Stable Charged Particles (HSCP)
- Upgrade

Required qualifications:

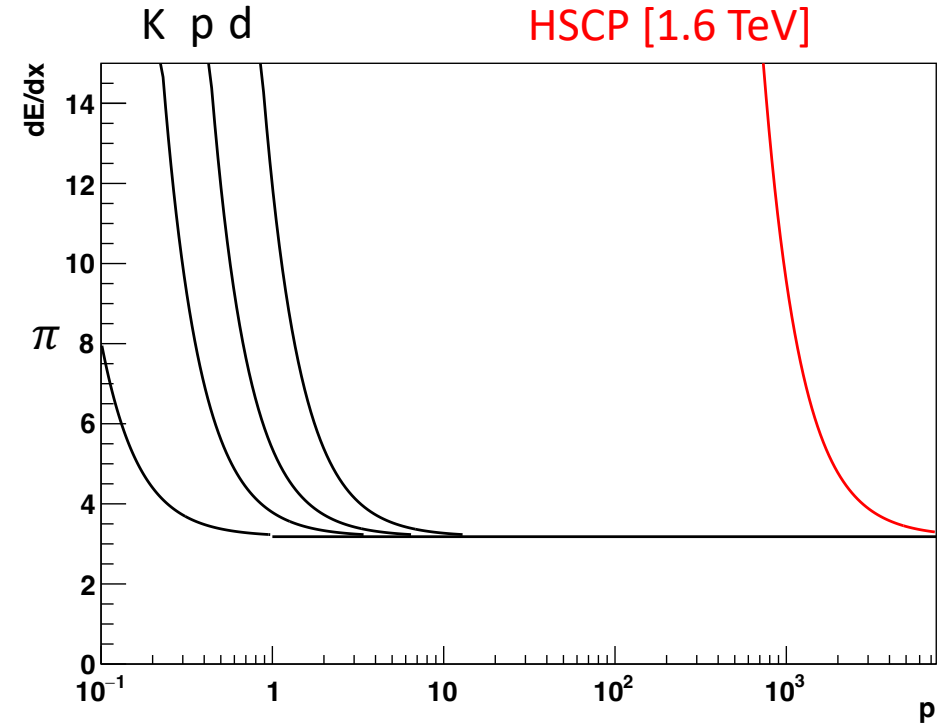
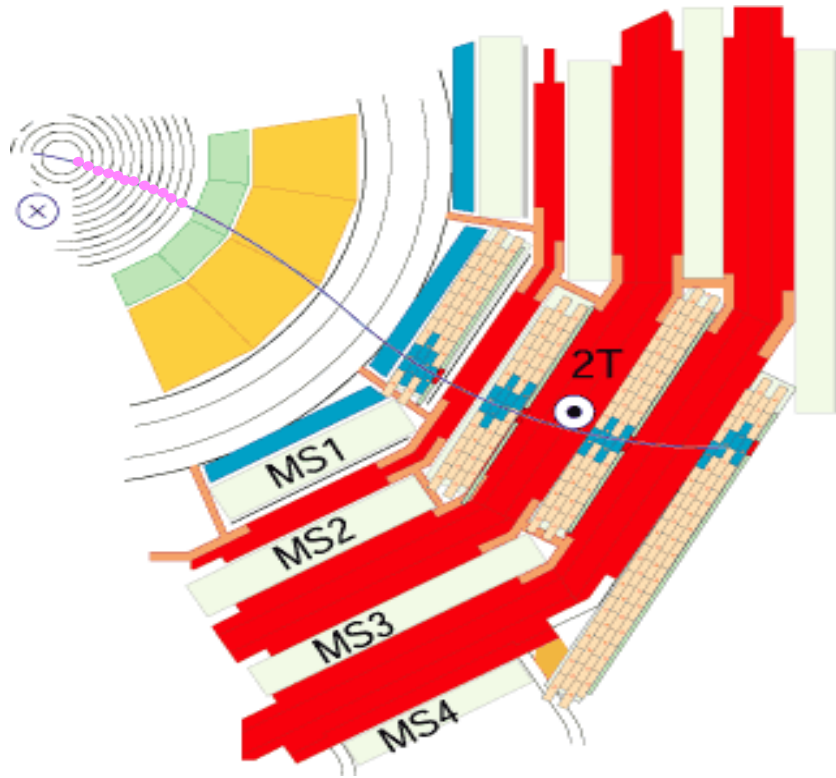
- Applicants must hold a PhD in particle physics or an equivalent degree at the time of appointment.
- They should have particle physics analysis and software skills (C++, Python, ROOT) and should be able to communicate in English.
- Experience in tracking detectors, muon detectors or in statistical tools will be highly appreciated but is not mandatory.

Expected starting date : Fall 2023

Heavy Stable Charged Particles (HSCP)

Hot topic (3.3 σ excess in ATLAS!)

- An isolated track of high p_T
- with large dE/dx in the tracker
- with a low β in muon chambers



Model independent search, but several BSM motivations:

- Lepton like HSCP: LL $\tilde{\tau}$, τ'
- Strongly interacting HSCP: R-hadrons from \tilde{g} or $\tilde{\tau}$

Participation to Run2 and Run3 analysis

Local team: 2 permanent researchers + 2 PhD students, working with international collaborators

HL-LHC's outer tracker TB2S detector

The group is involved in:

- The design and construction of the mechanical structure of its wheel
- The integration of modules and services in its ladders
- Test beams at the CMS Cyrcé's beamline (25 MeV protons, 40 MHz)

Participation to Upgrades activities

