



Postdoctoral position

- The “Laboratoire de l’Accélérateur Linéaire” (LAL) in Paris-France region invites applications for a postdoctoral researcher to be part of the ATLAS group, and to contribute to two areas in equal parts:
 - **Precision measurements of the vector boson scattering (VBS) with the full Run 2 data set and interpretation of the results in terms of Effective Field Theory (EFT). This topic is an emerging activity where the group has various expertises;**
 - **Involvement to the production of the pixel detector of the future inner tracker of ATLAS (ITk) in view of the high-luminosity phase of the LHC (HL-LHC). The LAL group has been qualified by ATLAS to be one of the ITk production sites and the timeline of the contract coincides with the consolidation of the pre-production phase, where several pixel modules will be produced and characterized in LAL.**
- The successful candidate is expected to contribute to:
 - Optimization of jet reconstruction;
 - Adapt and apply novel machine learning techniques in the context of the VBS analysis;
 - Result interpretation using EFTs;
 - Conduct original research independently and collaboratively;
 - Electrical and thermal characterization of pixel planar sensors and modules using LAL resources (probe station, climate chamber, clean room, etc) and test beam analysis;
 - Testing of ITk readout chip in close collaboration with the LAL engineers;
- The hosting team is part of the Laboratoire de l'Accélérateur Linéaire (<https://www.lal.in2p3.fr/>), located at the south of Paris, in the Campus of Université Paris-Sud of Paris-Saclay (<https://www.universite-paris-saclay.fr>). The group is composed by 16 permanent physicists, 3 emeritus, 2 postdoctoral researchers and 10 students. The group has had leading contributions since the launch of ATLAS to the electromagnetic calorimeter and to the analyses that allowed the discovery and study of the Higgs boson. Many

members of the group have had organization positions within ATLAS, as project leaders or analysis and performances group conveners at various levels.

Currently, three Upgrade projects are driven in parallel for the High Luminosity phase of LHC (2026->2036), concerning the liquid argon calorimeter electronics, the HGTD (timing detector) and the pixel detector of the ITK. The physicists involved in those activities collaborate with engineers and technicians of the laboratory and of the Omega pole. The physics topics of interest of the group currently are related to Higgs boson studies, searches of new physics beyond the Standard Model, and precision electro-weak measurements (W boson mass measurement and vector boson scattering).

- **Candidates who wish to apply:**

- Should have acquired a PhD in experimental high-energy physics in analysis or on hardware projects not earlier than September 2016.

- Should send a CV and a motivation letter to Lydia Fayard (lfayard@lal.in2p3.fr), Abdenour Lounis (lounis@lal.in2p3.fr) and Dimitris Varouchas (Dimitris.Varouchas@cern.ch).

- Recommendations letters (max. 3) should be sent to the same e-mail addresses.

- Finally, applicants should also apply using the following online form:
<https://emploi.cnrs.fr/Offres/CDD/UMR8607-SYLFAL-042/Default.aspx?lang=EN>

- The envisaged starting date of the position is fall 2019 (latest beginning of 2020) .

- Consideration of applications will begin in June 2019 and continue until the position is filled.