

RESEARCH PROJECT

Experimental Particle Physics Instrumentation at ATLAS for the LHC upgrade

ATLAS Bologna has major responsibilities in the operation of luminosity, muon and pixel detectors and leads several physics analyses.

The group has leading roles in ATLAS Phase-I upgrade projects (muon detector and Trigger/Data Acquisition) and Phase-II upgrade for HL-LHC (Silicon Strip, muon and luminosity detectors and Trigger/Data Acquisition).

The position has the goal to support ongoing Trigger/Data Acquisition activities in ATLAS for Phase-I and Phase-II projects. The successful candidate is expected to have strong interests in the broad LHC physics program

Activity plan: candidate is expected to:

- participate to the Phase-I and Phase-II ATLAS off detector readout upgrade;
- work on hardware, firmware and software tools and develop Data Acquisition chains to interface with the future front-end detectors;
- work at international laboratories, such CERN and BNL;
- take leading responsibilities in Trigger/Data Acquisition at international level.

Required knowledge, skills, and abilities:

- Ph.D. in high energy physics.
- Experience developing software for high energy physics experiments.
- Expertise in C/C++ and other computer languages including Python.
- Familiarity with computer operating systems such as Unix/Linux and Windows.
- Experience programming for FPGAs.

Preferred knowledge, skills, and abilities:

- Experience in physics measurements or detector performance studies in a high energy physics experiment.
- Experience with writing and debugging concurrent code.
- Ability to work in a large international collaboration.
- Hands-on problem solving skills and excellent verbal and written communication skills.