

Questionnaire to enter RD50

Name of the Institution:

Laboratoire de Physique Nucléaire et des Hautes Energies (LPNHE)
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Contact point:

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Participants:

M. Bomben	50%
G. Calderini	15%
F. Crescioli	15%
J. Chauveau	20%
G. Marchiori	20%

Present activity and available infrastructure:

The ATLAS group at LPNHE is presently involved in many R&D activities related to the tracker upgrade. Historically the group has developed in the years a significant expertise in Silicon sensors and radiation damage effects.

G.Calderini has been Project Leader of the BaBar Silicon Tracker (SVT) and M.Bomben and G.Marchiori have participated to the detector operations at SLAC, and to radiation damage tests through irradiation campaigns and test-beams.

In ATLAS, the group has contributed significantly to the development of device simulations which were at the basis of the design of the planar pixel sensors used for the ATLAS IBL. The group has participated also to the characterization of many planar pixel sensor productions made by the ATLAS PPS group, through electrical measurements in clean-room and test-beam activities. M. Bomben is presently

the ATLAS planar pixel sensor test-beam coordinator. The group will also take part in the assembly and test of the staves which will be used for the IBL.

The group is also involved in the R&D for active edge planar pixel sensors.

The expected contribution to the RD50 activities will be initially centered on the device simulation and possibly on common work on the active edge sensor productions. The group can also provide support to the Collaboration through the existing infrastructure at LPNHE, which includes an ISO7 and ISO8 cleanrooms equipped with test instrumentation, including a Karl Suss PA200 semi-automated probe-station. A test laboratory is also available, equipped with a test-bench for FE-I3 and FE-I4 data acquisition, a 1060nm laser setup for charge collection efficiency studies and a setup for data acquisition with radioactive sources. Additional support is available through facilities associated to the laboratory or other CNRS units. Possible examples of activities in facilities for which our group can provide access are Secondary Ion Spectroscopy Measurements (SIMS) characterization of devices at the CNRS Unit of Meudon, or Rutherford Back-Scattering (RBS) measurements at the INSP on our Campus Jussieu.