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Nordic Detector Technology Course, Laboratory exercises 7-11.1.2013, Helsinki Detector Laboratory

Contents:

Laboratory exercises will provide the participating PhD students with hands-on training in detector technologies, used in high-energy physics experiments. The supervised laboratory work will include semiconductor detectors, gas detectors, and read-out systems.

Tasks:

The students will be divided in groups of four (4) persons. It is worth noting that five (5) groups is maximum the Detector Laboratory can hold. Each group will perform two tasks:

A) **Construction and measurement of wire-chamber detector, 4 days**
The group constructs own particle detector using traditional gas-filled wire-chamber technology. Everyday materials such as sewer tube and iron wire are used in the work. In addition, the detector and appropriate read out electronics are used to measure cosmic muons.
Instructors: Francisco Garcia, Jouni Heino, Timo Hildén, Rauno Lauhakangas, Helsinki Detector Laboratory

B) **Detector response to irradiation, 1 day**
The group uses silicon detectors to measure detector response to radiation source. The detector is connected to read-out chip. The chain of data acquisition contains preamplifier, linear amplifier, multi channel analyser and oscilloscope.
Instructor: Prof. Richard Brenner, University of Uppsala, Sweden

Timetable:

The course starts with a common session where the tasks are explained and the groups are formed. The five groups will work simultaneously with Task A, each group with own wire-chamber detector. Instructors are available for questions all the time. One group per day will perform Task B. Reports will be written on both tasks.

Further information and registration at:
https://indico.nbi.ku.dk/conferenceDisplay.py?confId=454