Contribution ID: **33** Type: **Oral**

GLACIER for LBNO: Physics motivation and R&D results

Thursday 12 September 2013 16:40 (20 minutes)

"GLACIER is is a proposed giant liquid argon next-generation underground neutrino observatory scalable to masses of 100 kton. Equipped with double phase readout it provides excellent tracking and calorimetry performance that can outperform other techniques. As proposed by the future European Long Baseline Neutrino Oscillation program (LBNO), a neutrino beam from CERN with GLACIER as far detector would allow to precisely measure the neutrino mixing parameters, determine the neutrino mass hierarchy and test the existence of the CP-violating phase. At the same time, the detector could conduct astroparticle experiments of unprecedented sensitivity. GLACIER relies on novel technologies which are currently being tested on small scale prototypes. In the near future, we also plan to construct and operate larger devices. This talk, while covering the physics potential of GLACIER and of the LBNO program in general, will focus on the ongoing R&D towards the development of large double phase liquid argon detectors."

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Session Classification: Underground Laboratories/ Large Detectors II

Track Classification: Underground Laboratories/Large Detectors (incl. Nucleon Decay)