



Liquid argon detectors for neutrino physics

In the last 10 years neutrino physics has been revolutionized by the discovery of neutrino oscillations and by the increasingly more precise determination of the mixing parameters. Liquid argon detectors have been developed for over 30 years for applications in neutrino physics and proton decay searches, with the goal of combining, in the same detector, the imaging capability of a bubble chamber and the size of a water Cherenkov detector a` la SuperKamiokande. Multi-kton liquid argon time projection chambers are currently being developed to study the θ_{13} mixing angle, CP violation in the neutrino sector and the neutrino mass hierarchy.

This talk will present a broad overview of liquid argon detectors, focusing on the time projection chamber variety optimized for detection of GeV neutrinos. I will talk about past experiences and recent development, in particular the first working American liquid argon time projection chamber, built and tested at Yale in 2007.

Alessandro Curioni, Yale University

