

DARWIN: a 50-Ton Liquid Xenon Detector for Dark Matter and Neutrino Physics

Friday, 23 June 2017 10:45 (15 minutes)

DARWIN is the next generation liquid xenon experiment to probe the weak interactions for dark matter and neutrino physics. With a target mass ten times more than the current world's largest liquid xenon detector (XENON1T), DARWIN will probe the WIMP-nucleon cross section down to the 10^{-49} cm^2 region, measure the solar pp-neutrino flux down to sub-percent precision, probe the neutrino-nucleus coherent scattering, and search for neutrinoless double beta decays from more than 3.5-ton of Xe-136. The experiment is currently in the design phase. The technical challenges, possible solutions and design details will be presented.

Primary author: Prof. NI, Kaixuan (UC San Diego)

Presenter: Prof. NI, Kaixuan (UC San Diego)

Session Classification: Working Group: Neutrino Physics

Track Classification: Neutrino Physics Working Group