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Imaging Nuclear Recoils in Argon

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Tracking capabilities for Nuclear Recoils (NRs) from CEvNS interactions would allow measurements of the recoil energy and direction, enabling an expansive physics program which leverages the kinematics of the neutrino's coherent scattering interaction. This talk will present the status of experimental efforts aimed at imaging the ionization charge produced by NRs in argon. These efforts consist both of attempts to obtain direct charge amplification in liquid, as well as NR tracking in gas. We present progress in R&D devoted to developing tip-like geometries for micron-scale charge amplification, and simulation work aimed at exploring the experimental limitations and physics prospects of a physics program centered around CEvNS NR tracking.

Presenter: Prof. CARATELLI, David (UC Santa Barbara)

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