

# Measuring coherent elastic neutrino-nucleus scattering in argon with a scintillating bubble chamber

*Thursday 27 October 2022 09:45 (20 minutes)*

The scintillating bubble chamber is a new technology under development ideal for coherent elastic neutrino-nucleus scattering (CE $\nu$ NS) detection at reactor sites. The SBC collaboration is building a 10-kg bubble chamber using liquid argon with the potential to reach and maintain sub-keV energy thresholds. This detector will combine the event-by-event energy resolution of a liquid noble scintillation detector with the leading electron-recoil discrimination capability of the bubble chamber. The CE $\nu$ NS physics program of this detector will be presented in this talk, including the sensitivity to the weak mixing angle, neutrino magnetic moment, and a light  $Z'$  gauge boson mediator, in addition to other sensitivity to New Physics scenarios such as light scalar mediators, sterile neutrino oscillations, unitarity violation, and non-standard interactions.

**Author:** VAZQUEZ-JAUREGUI, Eric

**Presenter:** VAZQUEZ-JAUREGUI, Eric

**Session Classification:** Coherent Neutrino Scattering