

Abstract Submitted
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Neutron Activation Analysis for Low Energy Particle Physics Experiments CHRISTOPHER GRANT, University of California, Davis — Particle physics experiments searching for new physics at or below a few tens of MeV are generally plagued with backgrounds from both natural and cosmogenic-induced radioactivity. The frequency of such signals from new physics is extremely rare. In the case of neutrino-less double beta decay, direct dark matter searches, and neutrinos from astrophysical phenomena, sufficient quantification and suppression of backgrounds is vital. The experimental neutrino and dark matter group at UC Davis has been developing dedicated neutron activation facilities to address backgrounds in future liquid Argon TPCs and low-background liquid scintillation detectors. I will summarize neutron activation studies performed both at the McClellan Nuclear Research Center and the Crocker Nuclear Laboratory 67.5 MeV proton cyclotron. Projected sensitivities for radio-assaying U, Th, and K in detector materials will be presented, along with measurements of fast neutron reaction cross-sections on Argon nuclei.

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