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# Ionization yield of 7 keV nuclear recoils in liquid argon

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The response of liquid argon, and other low-background detector materials, to low-energy nuclear recoils is important for determining the sensitivity of these materials to light WIMPS and coherent neutrino-nucleus scattering. Using a small prototype dual-phase argon proportional scintillation counter at LLNL we have probed the response of liquid argon to sub-keV electronic recoils using 37Ar as an homogeneous internal calibration source. With this same detector we have measured the ionization yield of 7 keV nuclear recoils. This measurement was made using a near-threshold collimated Fe-filtered 7Li(p,n) source that provides a monoenergetic source of 70 keV neutrons.

## Summary

In this poster we discuss the design and low-energy sensitivity of our dual-phase argon detector, the design and characterization of the monoenergetic neutron source, and measurement of the ionization yield of 7 keV nuclear recoils in liquid argon.

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