



Physics Colloquium



Thursday, November 5th at 3:30 pm in SC 234

Dr. H. Rusty Harris

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CM Detectors for Dark Matter and Coherent Neutrino Scattering Search

We are facing exciting times in the search for dark matter and other elusive particles that will explain interesting observed galactic phenomena. Collaborations are ramping up aggressive detection methods to a scale large enough in mass to observe the rare recoil events and detect neutrino-nucleus coherent scattering as predicted by Standard Model Processes. In this talk we will examine the recent advances at Texas A&M on low mass dark matter detectors for the SuperCDMS collaboration. Detection down to ~ 1 eV is possible, with ~ 10 eV demonstrated, significantly extending the scope of mass over which the community can search for dark matter down to the neutrino floor. Additionally, we will examine the potential dual-use of dark matter detectors for coherent neutrino scattering experiment. The amplification methodology of small recoil signals employed by the A&M group, coupled with the ability to place detection within a meter of a 1MW reactor, will allow the MINER collaboration at Texas A&M to attain unprecedented event rates in the CNS search.

Refreshments at 3:00 pm in SC 103