

**PHYSICS & ASTRONOMY COLLOQUIUM
UNIVERSITY OF WISCONSIN – STEVENS POINT**

**FRIDAY, OCT 18, 2013
2:00 PM Room A106 SCI**

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**Performance and Background Study of DM-Ice17: NaI(Tl)
dark matter detectors in the South Pole ice**



Matthew Kauer obtained his PhD from University College London. He was awarded the IOP Astroparticle Physics Group Thesis Prize for his work on the neutrinoless double beta decay of ^{96}Zr using the NEMO-3 detector and calorimeter development for SuperNEMO. Matthew Kauer is currently a post-doc on DM-Ice and IceCube.



DM-Ice being lowered 2450m into the drilled ice

ABSTRACT: Astrophysical and cosmological observations suggest that roughly 23% of the Universe is cold dark matter. Although evidence for dark matter has been firmly established, its composition and characteristics remain largely unknown. Weakly Interacting Massive Particles (WIMPs) are theoretically favored because they can be produced in the early universe with the correct abundance to result in the observed relic density. DM-Ice17 constitutes the first direct detection search for dark matter in the southern hemisphere. It consists of 17 kg of active target material of NaI(Tl), and is a prototype detector for the DM-Ice dark matter experiment. It was successfully deployed 2450 meters deep in the glacial South Pole ice, and has been in continuous and stable operation since January 2011. Here, we report on the operation and performance of DM-Ice17.

*Faculty, staff and students are cordially invited to attend.
Refreshments will be served beginning at 1:45 pm*