

FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 10.01.2013, 16¹⁵ Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1
Treffen zum gemeinsamen Kaffee 16 Uhr

Dr. Michael Marino

(TU München, Excellence Cluster Universe)

Recent results of the EXO-200 neutrinoless double-beta decay experiment

Neutrinoless double-beta decay provides a strong probe of physics beyond the standard model. The observation of such a decay would establish that the neutrino and anti-neutrino are the same particle - a so-called Majorana particle - and would help determine the absolute mass scale of the neutrino. In addition, it could provide insight into understanding lepton-number-violating processes, helping to illuminate causes of the observed matter-anti-matter asymmetry in the universe. The Enriched Xenon Observatory (EXO) experiment employs an enriched liquid-xenon Time Projection Chamber (TPC) deployed underground at the Waste Isolation Pilot Plant (WIPP) in New Mexico, USA, to search for the neutrinoless double-beta decay of Xe-136. An overview of the EXO experiment will be given and recent results will be discussed establishing limits on the neutrinoless double-beta decay of Xe-136.

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