



# ACCELERATOR SEMINAR

**William Barletta**

Massachusetts Institute of Technology

**Thursday, 8<sup>st</sup> November 2018 at 4 pm**

**seminar room theory (SB3 3.170a)**

Planckstraße 1, 64291 Darmstadt

## **“High Power Cyclotrons for Neutrino Physics”**

Persistent anomalies in the behavior of neutrino oscillations calls for the fielding of a definitive experiment at the level of 5 to 10 sigma to search for the possible existence of so-called sterile neutrinos that can mix with the well-known electron, muon and tau varieties but which have no weak interactions. The high statistics and low systematics demanded for such a measurement require producing beams that can put  $\sim 10$  moles of protons on a neutrino production target in a few years. The IsoDAR collaboration proposes to use a new generation of compact cyclotrons that can far out perform commercial machines. The very high beam powers on target introduce their own technical challenges. This seminar will present an overview of the research that has been done to make practical, the technologies that underlie the IsoDAR experiment.



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Coordinator: Manuel Heilmann

Secretary: Paola Lindenberg

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