Date:	Thursday, 29 November 2018
Time:	09:30 - 10:50
Speaker:	David MARSH
Institution:	Institute for Astrophysics, Georg-August-University Göttingen

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## "TOORAD": A Proposal to Detect Dark Matter Using Axionic Topological Antiferromagnets

## **Abstract:**

Antiferromagnetically doped topological insulators (such as doped Bi2Se3) are among the candidate materials to host dynamical axion quasiparticles. I will demonstrate that using the axion quasiparticle antiferromagnetic resonance presents a viable route to detect axion dark matter with mass in the meV range. A key enhancement to the signal power compared to THz resonant cavity methods is achieved when A-TI samples can be manufactured with volumes much larger than 1 mm³. These materials can be manufactured by a variety of techniques, and the search is on to identify the axion quasiparticle with favourable properties for dark matter detection. Axion quasiparticles can also be used for "analogue" models of other axion search techniques, such as LSW.

Notes:	