

School of Physics and Astronomy

HEP SEMINAR



Dr Jay Newstead
Purdue University

Detecting light dark matter with xenon

Extending the reach of direct detection experiments into the domain of light dark matter has been the goal of many experimental and theoretical efforts over the past decade. In this talk I will review these efforts before focusing on two techniques in particular: the Migdal effect and cosmic-ray dark matter (CRDM). The increased sensitivity is achieved in different ways; the Migdal effect is an atomic effect which can be used to lower the threshold of existing experiments, while CRDM involves dark matter boosted to relativistic speeds (making it more detectable). These two techniques are particularly interesting since they do not require a special experimental setup and can be applied to existing data. Using data from the recent XENON1t experiment I will show how these techniques place the most stringent constraints on light dark matter.

Date:	Monday 10 February
Time:	11am
Venue:	L1, Seminar Room 107, 10 College Walk, Clayton

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