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Type: parallel talk

Multipurpose Monojets: Dark Matter and Neutrinos at the LHC

Tuesday 8 May 2012 17:00 (15 minutes)

Abstract:

LHC events with a single jet plus large missing energy have been used to set limits on the couplings of dark matter to quarks and gluons. We show that the neutrino background to this search can itself reveal new physics, shedding light on an intriguing solar neutrino anomaly. Interference effects and multi-lepton events can be used to discriminate between neutrinos and dark matter. We then turn to dark matter and demonstrate that if DAMA and CoGeNT are indeed detecting dark matter, then the mediator of dark matter-quark interactions is kinematically accessible at the LHC. To this end, we derive stringent new limits on a class of UV completions and show that the Tevatron still bests the LHC if dark matter is lighter than 100 GeV.

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