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Search for Long-Lived Massive Particles at CMS SETH COOPER, University of Minnesota, CMS COLLABORATION — Several models of new physics, including split supersymmetry, predict the existence of a heavy particle, which is long-lived on timescales of the bunch spacing of the LHC. Such a particle would be observable using the Compact Muon Solenoid (CMS) at the Large Hadron Collider (LHC), and although produced at high momentum, it would travel slowly due to its large mass. We describe a search for these particles, using the experimental techniques of time of flight and dE/dx measurement. Results are presented based on data recorded with CMS in 2011.

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