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Search for Long-Lived Particles out-of-time with LHC Collisions in ATLAS JOSHUA COGAN, SLAC National Accelerator Laboratory, ATLAS COLLABORATION — R-hadrons are massive, long-lived particles predicted in several Supersymmetry scenarios. Studies exploring the discovery potential of R-hadrons at the ATLAS detector have mainly focused on gluino R-hadrons. This talk describes a search for gluinos which have come to rest within the detector volume, particularly the calorimeter, and decay at some later time. We search for jets produced from the 2- or 3- body decays of the gluinos that have stopped within the calorimeter. The search is conducted in empty bunch crossings to greatly reduce backgrounds from pp collisions. Simple selection criteria enable the discrimination of signal events from the main background, which comes from cosmic rays.

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