

Abstract Submitted
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Search for non-pointing and delayed photons with ATLAS detector in pp collisions at $\sqrt{s} = 13$ TeV¹ SAI NEHA SANTPUR, MARJORIE SHAPIRO, University of California, Berkeley, HAICHEN WANG, Lawrence Berkeley National Laboratory, ATLAS COLLABORATION — A search for exotic decays of the Higgs boson to long-lived supersymmetric particles is presented. In the model considered, the long-lived particles would decay to photons and the lightest supersymmetric particles that escape detection. The signature of this process involves the presence of delayed and non-pointing photons (direction of flight does not point back to the primary vertex) as well as missing transverse energy. This analysis utilizes the unique capability of the ATLAS electromagnetic calorimeter to measure photons direction of flight and their time of arrival very precisely. The results of the analysis are based on 139 fb^{-1} of pp collision data at $\sqrt{s}=13$ TeV using the ATLAS detector.

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