

Abstract Submitted
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mono- Z' : The discovery potential in a search for dark matter in events with a Z' boson and missing transverse energy KEVIN BAUER, MARCELO AUTRAN, Univ of California - Irvine, TONGYAN LIN, University of Chicago, DANIEL WHITESON, Univ of California - Irvine — We analyze the LHC's potential for dark matter discovery in ATLAS events with missing transverse energy and a Z' decaying to a pair of jets or leptons. Many dark matter searches are ongoing at the LHC, analyzing events with missing transverse energy. However, a final state of Z' and missing energy has not yet been studied and contains significant discovery potential. Examples of effective field theory models for Z' production with dark matter are introduced. Using simulations of the 8 TeV LHC run, we explore reconstruction and selection strategies and discuss our sensitivity by comparing our expected limits to existing theory parameter limits.

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