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A study of potential signals from the Hidden Valley in ATLAS LAURA BODINE, DANIEL VENTURA, University of Washington, ROME1-SEATTLE ATLAS GROUP TEAM — In this talk we present results from a preliminary study of Hidden Valley particles decaying in the ATLAS detector at the Large Hadron Collider. The Hidden Valley Model[1] proposed by M. Strassler and K. Zurek predicts the existence of long-lived neutral particles that can decay to Standard Model particles. These particles may have long lifetimes, leading to unique signatures including highly displaced vertices. We present preliminary results of PYTHIA simulated Z' decays to Hidden Valley particles in the ATLAS detector. We discuss the typical event topology and the triggering efficiencies as a means of understanding the feasibility of detection in the ATLAS detector.

[1]M. Strassler and K. Zurek hep-ph/0604261.

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