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DENTIFYING PHOTONS FROM LONG-LIVED PARTICLES IN THE ATLAS DETECTOR[1] JAMMEL BROOKS, Indiana Univ - Bloomington — WHILE INCREDIBLY SUCCESSFUL, THE STANDARD MODEL FAILS AT EXPLAINING SEVERAL KNOWN FEATURES OF THE UNIVERSE SUCH AS DARK MATTER AND THE HIERARCHY PROBLEM. ONE POSSIBLE EXPLANATION IS SUPERSYMMETRY, WHERE EACH OF THE CURRENTLY KNOWN PARTICLES HAS AT LEAST ONE SUPERSYMMETRIC PARTNER. DEPENDING ON THE PARAMETERS OF THE MODEL, CERTAIN SUPERSYMMETRIC PARTNERS THAT DECAY IN PART TO PHOTONS CAN REMAIN UNDETECTED BY THE ATLAS DETECTOR, WHILE LIVING LONG ENOUGH TO DECAY AWAY FROM THE PRIMARY INTERACTION. DUE TO THIS LONG-LIVED DECAY, THE PHOTONS LEAVE NONSTANDARD ENERGY DEPOSITS IN THE ATLAS DETECTOR AND AS SUCH LESS STRINGENT PHOTON IDENTIFICATION REQUIREMENTS MUST BE USED. THIS POSTER DESCRIBES THE EFFICIENCY MEASUREMENT OF THESE LOOSER PHOTON REQUIREMENTS, HOW WELL MC SIMULATIONS DESCRIBE DATA, AND THE ASSOCIATED UNCERTAINTIES.

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