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Scintillation from Xenon-Doped Liquid Argon

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We report the results of an experiment which collected scintillation light induced by cosmic ray muons in xenon-doped liquid argon within the Blanche cryostat at Fermilab. Doping the liquid argon with xenon at concentrations of 7 ppm and greater resulted in a two-fold increase in the amount of scintillation photons incident on the detectors. Examination of the time-resolved scintillation profile indicates that the prompt signal from the singlet argon excimer state was substantially suppressed and the majority of the 128 nm scintillation signal was converted to wavelengths longer than 150 nm.

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