

Abstract Submitted
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Development of Cryogenic Photoelectronics for DarkSide-20k
PRIYANKA KACHRU, INFN- Laboratori Nazionali del Gran Sasso, DARKSIDE-20K COLLABORATION — The DarkSide collaboration aims to deliver the next generation dual phase Liquid Argon (LAr) TPC based experiment : DarkSide-20k, with an expected exposure of 200 tonne-year in zero instrumental background condition. The two technologies that enable this goal are : the use of underground argon, naturally depleted of ^{39}Ar , and the introduction of two photo-detector planes for a total of 20m² detection coverage. Such planes are constituted of high performances SiPM-based photodetectors specifically targeted for operations in liquid Argon, at 87 K, using extremely radiopure components. This talk will describe the performances of the 24 cm² photo-detector modules capable of delivering a Dark Count Rate lower than 24 Hz, with a Signal-to-Noise ratio ≥ 20 and a projected Photon Detection Efficiency larger than 40

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