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Characterising and simulating silicon photomultiplier detector response for the DarkSide-20k veto detector.

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DarkSide-20k is a direct detection dark matter search experiment that will search for dark matter candidates with masses from the keV to Plank scale. The detection signature is scintillation produced by energy deposition in a 51-tonne dual-phase liquid Argon time projection chamber (TPC) and surrounding veto region. Argon scintillation is detected by 27 m2 of novel low-noise cryogenic silicon photomultiplier (SiPM) array detectors. The poster will focus on SiPM array photodetector characterisation for the veto and simulation of realistic detector and electronics response.

Author: BHOWMICK, Pritindra (University of Oxford/STFC)

Presenter: BHOWMICK, Pritindra (University of Oxford/STFC)

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