Contribution ID: **24** Type: **Oral Presentation**

Photosensors for the DarkSide-20k Experiment

Tuesday, 11 December 2018 09:30 (25 minutes)

DarkSide-20k is a proposed 30-tonne fiducial mass liquid argon TPC that will perform an instrumental background-free search for WIMP dark matter. The TPC will be outfitted with 200,000 silicon photomultipliers (SiPMs) grouped into 8,280 single-channel, 25 cm^2 photosensors that are sensitive to single photoelectrons. We will present the cryogenic performance of the first DarkSide Motherboard, a 625 cm^2 module that houses 25 photosensors and their associated low-noise electronics. We will also discuss the strategy for producing the full complement of DarkSide photosensors, including the transition of wafer production to a commercial foundry and the construction of a dedicated, low-background packaging facility.

Primary author: GIOVANETTI, Graham (Princeton University)

Presenter: GIOVANETTI, Graham (Princeton University)

Session Classification: Parallel Session: Noble Element Detectors

Track Classification: Nobel Element Detectors