Contribution ID: **21**   Type: **not specified**

G4DS Package for the DarkSide-20k Experiment

Saturday 27 April 2024 11:50 (20 minutes)

DarkSide-20k will be a 50 tonne dual-phase LAr TPC for direct DM search, currently under construction at Hall C of LNGS. The simulation of backgrounds relies on a Geant4-based software package, G4DS, which was extensively developed in the context of the DarkSide-50 and is being used for all DarkSide-20k simulations as well as for several related experiments. G4DS provides a description of the response of argon to nuclear and electron recoils, as well as a simulation of the TPC optics tuned on DarkSide-50 data. We will discuss the status of the simulation and the latest developments for the modelling of neutron captures in Gd-PMMA that has been selected as a main construction material of the TPC. We will discuss, in addition, neutron propagation and cosmogenic backgrounds for DarkSide-20k.

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Session Classification: Workshop