

## DarkSide Search for Dark Matter

*Thursday, 30 May 2013 15:45 (25 minutes)*

The DarkSide staged program utilizes a dual-phase time projection chamber (TPC) with underground liquid argon as the target material for the scattering of dark matter particles. Efficient background rejection is achieved using several experimental handles such as pulse shape, ratio of ionization over scintillation signal, 3D event reconstruction, active neutron and muon veto. The scintillation light yield is a particularly important parameter as it sets the energy threshold for the pulse shape discrimination technique. The DarkSide-10 prototype detector performance will be presented, focusing on its light response, together with the status of the DarkSide-50 detector featuring a 50kg active mass and designed to reach sensitivity of  $10^{-45}$  cm<sup>2</sup> for dark matter scattering cross section.

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