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## **Pulse Shape Discrimination and Investigation of Detector Stability for DarkSide 20k**

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The DarkSide20k experiment is a direct Dark Matter detector focused on the search for WIMP dark matter. Its main component is a dual-phase Argon Time Projection Chamber (TPC) where WIMPs are mainly detected as nuclear recoils from collisions with Argon nuclei and the subsequent emission of scintillation light as well as ionisation electrons. Since the rate of signal events is expected to be much lower than background events (mainly electron recoils), understanding and rejecting the background is crucial. A major advantage of Argon is the ability to discriminate between electron and nuclear recoil events based on the time profile of the scintillation pulse. This technique is called Pulse Shape Discrimination. Presented are aspects of the PSD technique as well as its importance within the analysis framework of the experiment and the projection of sensitivity limits.

### **Speaker information**

PhD 2nd year

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**Classification de Session:** PhD Talks

**Classification de thématique:** Physics of the Universe