

Status of the SABRE experiment and background characterization

Thursday, May 25, 2017 1:30 PM (20 minutes)

The SABRE (Sodium-iodide with Active Background REjection) experiment is designed to search for WIMP dark matter via detection of an annually modulating signal.

The DAMA/LIBRA experiment claims the observation of a modulation compatible with dark matter detection. However, the candidate dark matter signal has not yet been confirmed by other experiments. SABRE will perform a high sensitivity search for a modulating signal using an array of NaI(Tl) crystals with unprecedented radio-purity, state-of-the-art phototubes, an active background veto, and ultra-pure-water shielding. The project comprises twin detectors installed at LNGS (Italy) and at SUPL (Australia). This solution will reduce seasonal and local systematic biases and will allow a more detailed study of the potential signal.

This talk will give an overview of the project, will describe recent developments, and will present a preliminary background model based on simulations and radio-purity measurements.

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Session Classification: Session 6