

The SABRE project

Friday 31 March 2023 10:30 (15 minutes)

The Sodium-iodide with Active Background REjection (SABRE) project attempts to test the controversial DAMA/LIBRA positive and model-independent dark matter claim by exploiting two nearly twin detectors in the northern hemisphere at LNGS (SABRE-North) and the southern hemisphere at SUPL (SABRE-South). The SABRE two locations represent a unique feature and the possibility of reducing systematic effects due to cosmic rays. Both projects will make use of high radio-purity NaI(Tl) detectors developed in collaboration with industrial partners using the vertical Bridgman method. The initial goal of SABRE was the development of a highly pure NaI powder and use it to make NaI(Tl) crystals. Several crystals made with this new powder have been tested deep underground at LNGS. The results of crystal characterization will be presented in the talk along with the strategy adopted for mass production needed for SABRE-North and SABRE-South. The design of the two projects and ongoing activities for SABRE-North in particular will also be discussed.

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