

## **Detecting DM annual modulation with SABRE**

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SABRE (Sodium-iodide with Active Background REjection) is a new NaI(Tl) experiment designed to test the DAMA/LIBRA claim for a positive WIMP-dark matter annual modulation signal. SABRE will consist of highly pure NaI(Tl) crystals in an active liquid scintillator veto that will be placed deep underground. The scintillator vessel will provide a veto against external backgrounds and those arising from detector components, especially the 3 keV signature from the decay of  $^{40}\text{K}$  in the crystal. It will therefore allow for a sensitive measurement of the  $^{40}\text{K}$  levels in the crystals as they are developed. Through the use of the veto and crystal purification techniques, we aim for a  $^{40}\text{K}$  background 10 times lower than that of the DAMA/LIBRA experiment. The Neutron Veto of the DarkSide experiment provides a natural environment for testing the crystals.

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