

The dark matter direct search initiative at JUSL, India

Mala Das^{1*}

¹*High Energy Nuclear & Particle Physics (HENPP) Division, Saha Institute of Nuclear Physics, Kolkata INDIA

Abstract

InDEX (Indian Dark mater direct search Experiment) has been started at JUSL with superheated liquid detector containing C₂H₂F₄ as the active target. The experiment is planned to search for the low mass dark matter (WIMPs) and the presence of hydrogen made this experiment sensitive to low mass WIMPs in the sub-GeV range. The first result from run-1 and run-2 at JUSL have been completed and results are obtained in the mass range of near 20 GeV with an upper limit of sensitivity to about 10-40 cm². The InDEX is now upgrading for the larger mass detector to be operated at lower thresholds. The present status of InDEX and the future possible direction will be discussed in this talk. This is the first experiment of this kind in our country in the underground lab in India with indigenously made detector and instrumentation. The other proposals in DM direct search at JUSL will also be highlighted.