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Vincenzo Caracciolo (LNGS, INFN): Dark Matter Investigation by DAMA/LIBRA

Friday 23 February 2018 09:15 (15 minutes)

The DAMA/LIBRA set-up (about 250 kg highly radiopure NaI(Tl)) is currently in data taking at the Gran Sasso National Laboratory of the I.N.F.N. in its phase2. This experiment is dedicated to the investigation of Dark Matter (DM) particles in the galactic halo mainly by exploiting the model independent Dark Matter annual modulation signature. DAMA/LIBRA collected in its rst phase data over 7 annual cycles corresponding to an exposure of 1.04 ton x yr (DAMA/LIBRA-phase1). The DAMA/LIBRA-phase1 and the former DAMA/NaI data (cumulative exposure 1.33 ton x yr, corresponding to 14 annual cycles) give evidence at 9.3 sigma C.L. for the presence of Dark Matter particles in the galactic halo on the basis of the model independent DM annual modulation signature in highly radio-pure NaI(Tl) target. In this talk the results will be introduced and some of the most recent analyses will be presented as well as perspectives of the presently running phase-2. Possible future perspectives will also be addressed.

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