

First results from DAMA/LIBRA-phase2

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The first results obtained by the DAMA/LIBRA-phase2 experiment are presented. The data have been collected over 6 independent annual cycles corresponding to a total exposure of $1.13 \text{ ton} \times \text{yr}$, deep underground at the Gran Sasso National Laboratory of the I.N.F.N. The DAMA/LIBRA-phase2 apparatus, about 250 kg highly radio-pure NaI(Tl), profits from a second generation high quantum efficiency photomultipliers and of new electronics with respect to DAMA/LIBRA-phase1. The improved experimental configuration has also allowed to lower the software energy threshold. The DAMA/LIBRA-phase2 data confirm the evidence of a signal that meets all the requirements of the model independent Dark Matter annual modulation signature, at 9.5σ C.L. in the energy region (1–6) keV. In the energy region between 2 and 6 keV, where data are also available from DAMA/NaI and DAMA/LIBRA-phase1, the achieved C.L. for the full exposure ($2.46 \text{ ton} \times \text{yr}$) is 12.9σ .

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