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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 ton × 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 9.5 σ 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 ton × yr) is 12.9 σ.

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