



Contribution ID: 207

Type: oral

## Annual modulation results from DAMA/LIBRA

*Tuesday, 24 September 2024 15:42 (17 minutes)*

The DAMA/LIBRA experiment (about 250 kg of highly radio-pure NaI(Tl)) at the Gran Sasso National Laboratory (LNGS) of the I.N.F.N. is presented. Its main aim is the investigation of Dark Matter (DM) particles in the Galactic halo by pursuing the model independent DM annual modulation signature. DAMA/LIBRA–phase2, with improved experimental configuration and lower software energy threshold with respect to the phase1, confirms a signal that meets all the requirements of the model independent DM annual modulation signature, at high C.L.. No systematic or side reaction able to mimic the exploited DM signature has been found. The obtained DAMA model independent result is compatible with a wide set of scenarios regarding the nature of the DM candidate and related astrophysical, nuclear and particle physics models. A new configuration of DAMA/LIBRA–phase2 (dubbed “empowered”) is now running with a further lowered energy threshold. This last phase of measurement is ongoing. In the talk, a summary of the results obtained so far by DAMA/LIBRA will be released and the perspectives of the present new running configuration will be presented.

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**Session Classification:** Direct Dark Matter detection