Contribution ID: **758**   Type: **Parallel session talk**

ANAIS-112 updated results on dark matter annual modulation

Thursday 18 July 2024 14:30 (18 minutes)

The ANAIS experiment aims to independently verify or refute the longstanding positive annual modulation signal observed by DAMA/LIBRA using the same target and technique. While other experiments have ruled out the parameter region highlighted by DAMA/LIBRA, their results rely on assumptions on the dark matter particle and its velocity distribution, as they utilize different target materials. ANAIS–112, comprising nine 12.5 kg NaI(Tl) modules arranged in a 3×3 matrix configuration, has been continuously collecting data at the Canfranc Underground Laboratory in Spain since August 2017, demonstrating outstanding performance. Results based on three-year exposure were consistent with the absence of modulation and not compatible with DAMA/LIBRA at a sensitivity of almost 3σ confidence level. We will discuss the current state of the experiment and its most recent data analysis. Updated sensitivity projections will be provided, foreseeing a 5σ exclusion of the DAMA/LIBRA signal by late 2025.

Alternate track

I read the instructions above

Yes

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Session Classification: Dark Matter

Track Classification: 09. Dark Matter Detection