Contribution ID: **20** Type: **not specified**

Dark matter annual modulation with ANAIS-112: three years results

Tuesday, September 14, 2021 4:20 PM (20 minutes)

ANAIS-112 is a dark matter direct detection experiment that operates 112 kg of NaI(Tl) scintillators at the Canfranc Underground Laboratory. Its main goal is to do a model independent test of the DAMA/LIBRA observation of an annual modulation in the detection rate compatible with that expected for dark matter. This signal is in strong tension with the negative results of other experiments. However, a direct comparison using the same target material was lacking. ANAIS-112 is taking data since August 2017 with excellent performance. Results from the first three years are compatible with the absence of modulation and incompatible with the DAMA/LIBRA measured modulation at more than 2.5 sigma C.L. This result supports the projected goal of reaching a 3 sigma sensitivity for the five-year operation scheduled. In this talk we will describe the ANAIS-112 setup, performance and data analysis.
Then we will present the three-year results and discuss the physical implications and prospects.

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Session Classification: DM Direct Detection