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Preliminary results of ANAIS-25

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The ANAIS (Annual Modulation with NaI(Tl) Scintillators) experiment aims at the confirmation of the DAMA/LIBRA signal using the same target and technique at the Canfranc Underground Laboratory. 250 kg of ultrapure NaI(Tl) crystals will be used as a target, divided into 20 modules, each coupled to two photomultipliers. Two NaI(Tl) crystals of 12.5 kg each, grown by Alpha Spectra from a powder having a potassium level under the limit of the analytical techniques, form the ANAIS-25 set-up. Preliminary results of the ANAIS-25 set-up will be presented. The background measured by these two modules has been carefully studied: their natural potassium content in the bulk has been quantified, as well as the uranium and thorium radioactive chains presence in the bulk through the discrimination of the corresponding alpha events by PSA, and due to the fast commissioning, the contribution from cosmogenic activated isotopes is clearly identified and their decay observed along the first months of data taking. Background results are supported by the background model carried out with a Geant4 simulation. Following the procedures established with ANAIS-0 and previous prototypes, bulk NaI(Tl) scintillation events selection and light collection efficiency have been studied.

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