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ANAIS: Status and prospects

ANAIS (Annual modulation with NAI Scintillators) experiment will look for dark matter annual modulation with 250 kg of ultra-pure NaI(Tl) scintillators at the Canfranc Underground Laboratory (LSC), aiming to confirm the DAMA/LIBRA positive signal in a model-independent way. The detector will consist in 20 close-packed single modules, each of them coupled to two high efficiency Hamamatsu photomultipliers. Two 12.5 kg each NaI(Tl) crystals provided by Alfa Spectra are currently taking data at the LSC. The outstanding light collection efficiency obtained with these prototypes (12- 16 phe/keV) allows us to anticipate an energy threshold of the order of 1 keVee. ANAIS crystal radiopurity goals are fulfilled for ^{40}K and ^{232}Th and ^{236}U chains, but a ^{210}Pb contamination out-of-equilibrium has been identified, whose origin has been determined and is being solved. Finally, prospects of the experiment considering several background and threshold scenarios are revised.

Summary

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