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First Result on the Neutrinoless Double Beta Decay of 82Se with CUPID-0

Saturday, July 7, 2018 4:30 PM (30 minutes)

CUPID-0 is the first large mass experiment based on cryogenic calorimeters (bolometers) which implements the dual read-out of light and heat for background rejection. The detector, consisting of 24 enriched Zn 82Se crystals (5.28 kg of 82Se), is taking data in the underground LNGS (Italy) from March 2017. In this talk I will present the analysis that allowed to set the most stringent limit on the half-life of neutrino-less double beta decay of 82Se. I will show how the particle identification, enabled by the simultaneous read-out of heat and light, provides an unprecedented background level for cryogenic calorimeters of 3.6×10ˆ{−3} counts/keV/kg/y.

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