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Status of the CUORE program in neutrinoless double beta decay

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The Cryogenic Underground Observatory for Rare Events (CUORE) is an upcoming experiment whose primary goal is to search for neutrinoless double beta decay (0 ν BB) in Te-130. The detector will consist of 988 TeO₂ crystal bolometers arranged into 19 towers and cooled to 10 mK inside a custom-built cryostat at the underground Gran Sasso National Laboratory (LNGS), Italy, which provides the low-background environment necessary for high-sensitivity searches of this kind. The first tower produced by the CUORE detector assembly line, CUORE-0, is currently taking data in an existing cryostat at LNGS while the 19 CUORE towers and the new experimental facility are being prepared. I will review the basics of the bolometric technique and the physics goals and status of CUORE-0 and CUORE.

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