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Current Status and Results of CUORE in the Search for Neutrinoless Double Beta Decay[1] BRADFORD WELLIVER, Lawrence Berkeley National Laboratory, CUORE COLLABORATION — The Cryogenic Underground Observatory for Rare Events (CUORE) is the largest bolometric experiment searching for neutrinoless double beta ($0\nu\beta\beta$) decay. If observed $0\nu\beta\beta$ could answer fundamental questions that remain about the nature of the neutrino such as the mass hierarchy, whether they are Majorana fermions, and would present new physics beyond the standard model via lepton number violation. CUORE is comprised of 988 TeO_2 crystals (742 kg) arranged into 19 towers, with each crystal operated as a cryogenic bolometer and began taking data in the spring of 2017. This talk will briefly describe the CUORE experiment and summarize the efforts made to improve detector performance, with an emphasis on improving the energy resolution and suppression of backgrounds in the ^{130}Te $0\nu\beta\beta$ decay region of interest. Additionally the current status of the ongoing $0\nu\beta\beta$ search will be discussed as well as the present state of the CUORE experiment.

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