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CUORE and CUORE-0: Searching For Neutrinoless Double Beta Decay in ^{130}Te IVO PLAMENAC, SAMUEL MEIJER, California Polytechnic State University - San Luis Obispo, CUORE COLLABORATION — CUORE (Cryogenic Underground Observatory for Rare Events) is one of the leading experiments in the search for neutrinoless double beta decay; a type of decay which has yet to be witnessed in nature. If such a decay exists, CUORE intends to find it using an innovative source equals detector apparatus with TeO_2 crystals that are abundant in ^{130}Te. If CUORE is to detect such an event, it would provide evidence that the neutrino is its own antiparticle. Such results would require a revision in the Standard Model. Over the Summer of 2010, Cal Poly undergraduates travelled to the Gran Sasso National Laboratory in Assergi, Italy to assist in PTFE couplings cleaning, as well as assist in other various tasks to help progress CUORE-0, an initial run of one of the CUORE TeO_2 towers. An overview of neutrinoless double beta decay and the CUORE experiment as well as a brief progress report of CUORE-0 will be presented. This work was fully supported by NSF PHY-0969852.

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