Abstract Submitted
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CUORE: Cryogenic Maintenance[1] ALISON GOODSELL, ROBIN REIL, California Polytechnic State Univ, San Luis Obispo, CUORE COLLABORATION — CUORE (Cryogenic Underground Observatory for Rare Events) will be the largest detector used to investigate neutrinoless double beta decay in ^{130}Te. Neutrinoless double beta decay has never been observed in nature. If detected, it would be a major scientific discovery indicating that the neutrino is its own antiparticle; this breakthrough would signal a fundamental revision to the Standard Model of physics. Located in Assergi, Italy at the Gran Sasso National Laboratory (LNGS), CUORE will be a cryogenic bolometer composed of 988 TeO_2 crystals with a total mass of 750 kg. Over the summer of 2009, we traveled to the LNGS to assist the CUORE Collaboration by performing standard shifts for the Three Towers Test, a diagnostic experiment used to determine optimal hardware cleaning methods. Shifts involved refilling the cryogenics system with liquid helium coolant to keep the crystal bolometers at an operating temperature of approximately 10 mK, and other routine tasks.

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