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Searching for Neutrinoless Double Beta Decay in Ge-76 with LEGEND WENQIN XU[1], University of South Dakota, LEGEND COLLABORATION — Neutrinoless double beta decay ($0\nu\beta\beta$) is a hypothetical lepton-number-violating process that is possible only if neutrinos are Majorana particles, *i.e.* fermions that are their own antiparticles. The discovery of $0\nu\beta\beta$ would unambiguously establish the Majorana nature of neutrinos and explicitly show that the total lepton number is violated. In their search for $0\nu\beta\beta$ in ^{76}Ge, the GERDA and MAJORANA DEMONSTRATOR (MJD) experiments have achieved the best energy resolution in all $0\nu\beta\beta$ experiments as well as unprecedented low background in the signal region. The Large Enriched Germanium Experiment for Neutrionless double beta Decay (LEGEND) combines the best technologies of both GERDA and MJD. LEGEND aims to develop a phased, ^{76}Ge based $0\nu\beta\beta$ experimental program with a discovery potential of a half-life beyond 10^{28} years. The initial phase of LEGEND, LEGEND-200, with 200 kg of active mass is under construction utilizing retrofitted GERDA infrastructure, and plans to start data-taking in 2021. The subsequent phase, LEGEND-1000, will deploy 1000 kg of active mass. In this talk, we will overview the LEGEND program, including the physics goals and the status of LEGEND-200 construction and LEGEND-1000 preparation.

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