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The Status and Initial Results of the MAJORANA DEMONSTRATOR Neutrinoless Double-Beta Decay Experiment (15' + 5')

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Neutrinoless double-beta decay searches play a major role in determining the nature of neutrinos, the existence of a lepton violating process, and the effective Majorana neutrino mass. The MAJORANA Collaboration is assembling an array of high purity Ge detectors to search for neutrinoless double-beta decay in ^{76}Ge. The MAJORANA DEMONSTRATOR is comprised of 44 kg (30 kg enriched in ^{76}Ge) of Ge detectors in total split between two modules contained in a low background shield at the Sanford Underground Research Facility in Lead, South Dakota. The initial goals of the DEMONSTRATOR are to establish the required background and scalability of a Ge-based next-generation tonne-scale experiment. Following a commissioning run that started in 2015, the first detector module started physics data production in early 2016. The collaboration plans to complete the assembly of the second detector module by mid 2016 to begin full data production with the entire array. We will discuss initial results of the the Module 1 commissioning and first physics run, as well as the status and potential physics reach of the full MAJORANA DEMONSTRATOR experiment.

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