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Status of the Project 8 Phase II

Thursday, 27 July 2017 16:00 (15 minutes)

The Project 8 collaboration aims to measure the absolute neutrino mass scale using cyclotron radiation emission spectroscopy on the beta decays of tritium. The second phase of the project will measure a continuous spectrum of molecular tritium beta decays and extract the tritium endpoint value with an eV or sub-eV scale precision. Monoenergetic electrons emitted by gaseous ^{83m}Kr atoms are used to determine the relationship between the cyclotron frequency and the electron energy and to optimize the instrument configuration for the tritium measurement and the electron signal reconstruction algorithm. Phase II will benefit from precise magnetometers and a gas system combining krypton and tritium that allow to measure and correct offline for the magnetic field fluctuations. We present the recent progress in understanding the electron kinematics and implementing the magnetic field calibration.

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