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Determination of absolute neutrino mass using quantum technologies

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Quantum Technologies for Neutrino Mass (QTNM) is a project recently funded in the UK by the Quantum Technologies for Fundamental Physics programme. Its goal is to harness recent breakthroughs in quantum sensors to assess the feasibility of a positive neutrino mass measurement with a sensitivity in the 0.01 - 0.1 eV range. It will use the Cyclotron Radiation Emission Spectroscopy (CRES) technique to measure the energy of electrons emitted in the beta-decay of atomic tritium.
To accomplish this goal QTNM is developing a number of quantum technologies such as quantum noise limited microwave amplifiers and Rydberg atoms magnetometry.
I will review the status of the QTNM project, the technological developments pursued by the collaboration, and will give an outlook into the project's future.

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