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Project 8: Status and Update

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The neutrino mass scale is presently unknown but its range is now bounded from above by laboratory measurements of tritium beta decay and from below by oscillation measurements. The Project 8 experiment exploits a new technique designed to allow measurements in this range, potentially allowing us to reach sensitivity down to the inverted hierarchy scale. The technique makes use of cyclotron radiation emitted by electrons from tritium decay in a uniform magnetic field. The viability of the method on a small scale was demonstrated recently using the isotope ^83mKr . Project 8 is being developed in a phased approach through systems of increasing size and complexity, with the final goal a large-scale atomic tritium experiment. We will describe the status of the program, and some of the challenges and advances.

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