

Sterile Neutrino Dark Matter Searches with the KATRIN Experiment

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Sterile neutrinos are a natural extension of the Standard Model of particle physics. If their mass is in the keV range, they are a viable dark matter candidate. One way to search for sterile neutrinos in a laboratory-based experiment is via tritium beta decay. A sterile neutrino with a mass up to 18.6 keV would manifest itself in the decay spectrum as a kink-like distortion. The objective of the TRISTAN project is to extend the KATRIN experiment with a novel multi-pixel silicon drift detector and readout system to search for a keV-scale sterile neutrino signal. This talk will give an overview on the current status of the project with an emphasis on the detector performance. Characterization measurement results obtained with a 166-pixel system will be shown.

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Collaboration

Role of Submitter

I am the presenter

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