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keV Sterile Neutrino Dark Matter Terrestrial Searches: Alive and Well

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What if the dark matter content of the universe was made up of sterile neutrinos with a mass of the order of keV?

Currently, constraints from the measured relic abundance of dark matter and from observations in the X-ray band threaten the possibility of finding in terrestrial experiments a signal of such sterile neutrinos produced through oscillation and collisions in the early universe.

We consider two scenarios in which the simple hypothesis of

- a low reheating temperature
- a new contribution to the sterile neutrino decay process

naturally relax these constraints and give new vigor to the hope of obtaining proof of the existence of these elusive dark matter candidates in experiments such as KATRIN and ECHO in the near future.

Collaboration name

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