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Light Sterile Neutrinos: A Modern Picture and a Model to Evade Cosmology

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I will review existing hints and constraints on light sterile neutrinos. I will then explain the primary reasons why these anomalous data sets cannot be simply interpreted as a 1 eV sterile neutrino due to constraints from other experimental probes, notably solar neutrinos and cosmological data sets. I will present a novel, simple model that evades many of these constraints by adding in one new particle, which is the dark matter, beyond a sterile neutrino leading to shape-shifting sterile neutrinos.

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