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Solar Neutrinos, Sterile Neutrinos and Dark Matter Experiments

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Solar neutrino scattering with electron via a light mediator, either scalar or vector can be searched in Xenon-based Dark Matter experiments. A keV sterile neutrino instead of an active neutrino can appear in the final state for the recoil electron. Such a scenario is difficult to probe in other types of experiments and can be used to obtain stringent bounds on new interactions. Moreover, a sterile neutrino with mass at the 100 keV allows the explanation of the Xenon1T excess. We also briefly discuss the case of sterile neutrino final state with light Z' mediator.

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