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Dark matter detection in condensed systems

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Dark matter detectors, in particular those based on dielectric materials, are among the best tools for probing light dark matter. In the coming years detectors of this type will become sensitive to solar neutrino scattering. For dark matter scattering at very low recoil energies, collective excitations of the electrons in the solid become important. In this talk I'll share some new results incorporating collective excitations due to neutrino scattering on electrons and nuclei. I'll then show what sensitivity future detectors of this type can hope to achieve.

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