CMB signatures of dark matter interactions beyond the power spectrum

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Dark matter (DM) might have non-gravitational interactions with the standard sector, which would leave signatures in the cosmic microwave background (CMB). Traditional searches for such interactions focus on their imprints in CMB power spectra, or 2-point functions. In this talk I will argue that there is valuable information in both the CMB monopole's *frequency* spectrum, i.e. deviations from a perfect blackbody, as well as in higher-order statistics of CMB anisotropies, such as trispectra or 4-point functions. I will consider specifically two very different DM models: accreting primordial black holes and particle-DM that can scatter elastically off nuclei or electrons.

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