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Testing Dark Matter Energy Injection in CMB Measurements

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The precision cosmic microwave background (CMB) measurement tells us a lot about the CMB propagation during the dark and reionization eras of the Universe. Beside a significant boost towards precision cosmology,

this newly acquired understanding of the CMB signals can be turned into a powerful test of potential imprints

on to the post-recombination temperature and ionization history from beyond the Standard Model physics: injection

of the energy from the annihilation, decays of dark matter or other new physics. The upcoming CMB polarization

experiments and 21cm measurements, like ALiCPT, can enhance the prospective detection sensitivity to such

new physics processes.

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