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Inferring star-formation history via cross-correlations of Euclid's photometric clustering and shear and the cosmic infrared background

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The cosmic infrared background (CIB), emitted by dust heated during star formation, traces the buildup of stars across cosmic time. By separating the CIB contributions from galaxies at different redshifts, we can map the star-formation history.
In this work, we cross-correlate Planck CIB maps with Euclid galaxy clustering and weak lensing data, using halo-model templates to measure the bias-weighted star formation rate density (\b\rho_{sfr}) as a function of redshift.
Simulations and Fisher analyses show that Euclid will significantly tighten constraints on (\b\rho_{sfr}) and extend this measurement to higher redshifts.

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