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Cosmological results from the Kilo Degree Survey

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Gravitational lensing represents a unique tool to study the dark Universe. In the weak lensing regime small distortions in the images of galaxies caused by the large-scale structure can be detected over the whole sky. Measuring these coherent distortions yields cosmological insights complementary to other probes like the cosmic microwave background (CMB). Ongoing wide-field imaging surveys exploit this to come up with competitive constraints on important cosmological parameters. In this talk I will concentrate on recent results from the ongoing European Kilo Degree Survey (KiDS) and show a mild tension of these results with CMB measurements from the Planck mission when the standard cosmological model is assumed. Possible solutions to this discrepancy using extensions to the standard model of cosmology and future developments will be discussed. I will conclude with an outlook towards missions like Euclid, LSST, and WFIRST.

Experimental Collaboration

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