

Calibration and Standardization of Large Surveys and Missions in Astronomy and Astrophysics



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Effect of Calibration Errors on Cosmological Parameter Estimates

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Imperfect calibration of galaxy surveys due to either astrophysical or instrumental effects leads to biases in measuring galaxy clustering. These systematics in turn affect cosmological parameter measurements. More interestingly (and disturbingly), the spatially varying calibration errors also generically lead to violations of statistical isotropy of the galaxy clustering signal. Here I present preliminary results from ongoing work to estimate the effect of calibration errors with arbitrary spatial dependence on the cosmological parameter constraints. Using results from a recently developed end-to-end pipeline to study the effects of calibration errors, I illustrate biases on dark energy and non-Gaussianity parameters using some specific calibration error examples, and outline requirements on the calibration so that it does not lead to appreciable biases in the cosmological parameters.

Primary author: Dr HUTERER, Dragan (University of Michigan)

Presenter: Dr HUTERER, Dragan (University of Michigan)

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