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## First measurement of projected phase correlations and large-scale structure constraints

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Phase correlations have been proposed as an efficient higher-order statistic able to extract cosmological and astrophysical information that is largely independent from the two-point function or power spectrum. In this talk, we develop an estimator for the line correlation function of projected fields, corresponding to the correlation between the harmonic-space phases of the field at three equi-distant points on a great circle. We then use this estimator to make a first measurement of phase correlations on data from the 2MASS photometric survey. Finally, we demonstrate that the projected line correlation function contains information that is largely orthogonal to the power spectrum. Focusing on the galaxy-halo connection, we show that this can lead to a dramatic reduction in the final parameter uncertainties.

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