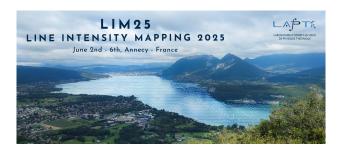ID de Contribution: **59**   Type: **Non spécifié**

Understanding the LIM Galaxy Power Spectrum: The Role of Shot Noise, Satellite Galaxies, and Secondary Bias

mercredi 4 juin 2025 16:00 (15 minutes)

We present a physically motivated model for the power spectrum of galaxies weighted by their star formation rates, decomposing it into a 1-halo and 2-halo term while incorporating key effects such as nonlinear bias, scale-dependent shot noise and halo exclusion. Our model reproduces the LIM TNG power spectrum to within a few percent across all scales. We find that omitting satellite galaxies leads to an underestimation of both the large-scale bias and the mean intensity by approximately 30% at z~1.5.

Additionally, we investigate the impact of secondary bias, revealing systematic errors of ~5% in the 2-halo term and ~10% in the 1-halo term. These results highlight the importance of accurately modelling galaxy-halo connections and halo-scale effects to extract optimal information from LIM surveys.

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