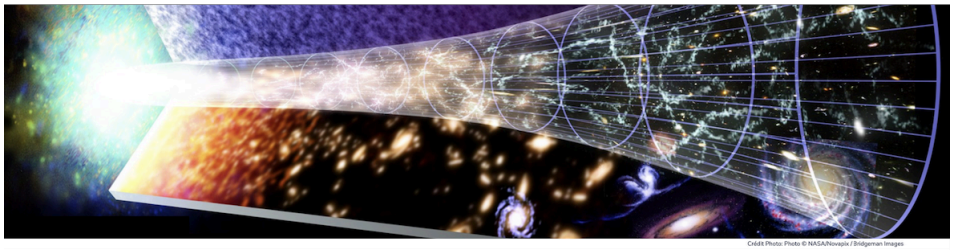

ID de Contribution: **63** Type: **Non spécifié**

Simulation-Based Inference (SBI) for cosmology with type Ia Supernovae (SNe Ia).

mardi 2 juin 2026 18:00 (30 minutes)

Systematic uncertainties associated to calibration, selection functions and astrophysical effects are dominating the error budget of SNe Ia cosmology. Correction methods applied to account for these systematics, and especially for the complex combination of selection functions and astrophysical variability, are questionable, particularly given the current H0 and Λ tensions for which SN Ia data are central.

Recently, the Zwicky Transient Facility (ZTF) survey has produced a volume-limited sample of more than a thousand SNe Ia, allowing to directly probe the distribution of SNe Ia parameters without being affected by selection effects. However, extending the cosmological analysis to higher redshifts, leveraging the full ZTF DR2 dataset, requires a robust treatment of selection effects.

Using datasets realistically produced using skysurvey, we train a Neural Network (NN) to infer the simulation input parameters. This novel inference method, called SBI, is a promising avenue to solve the complex problem of cosmological inference with SNe Ia data, and thus accurately derive H0, w0 and wa.

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Classification de Session: Tuesday Afternoon