



Contribution ID: 26

Type: Flash talk

## SBI meets reality: simulation-based inference in practical cosmology applications

*Tuesday, November 28, 2023 3:15 PM (3 minutes)*

Simulation-based inference (SBI) building on machine-learned density estimation and massive data compression has the potential to become the method of choice for analysing large, complex datasets in survey cosmology. I will present recent work that implements every ingredient of the current Kilo-Degree Survey weak lensing analysis into an SBI framework which runs on similar timescales as a traditional analysis relying on analytic models and a Gaussian likelihood. We show how the SBI analysis recovers and, in several key aspects, goes beyond the traditional approach. I will also discuss challenges and their solutions to SBI-related data compression and goodness-of-fit in several real-world cosmology applications.

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**Session Classification:** Contributed talks

**Track Classification:** Paris