

# HI-PPL:

## Hyperfast Inference with a Probabilistic Programming Language

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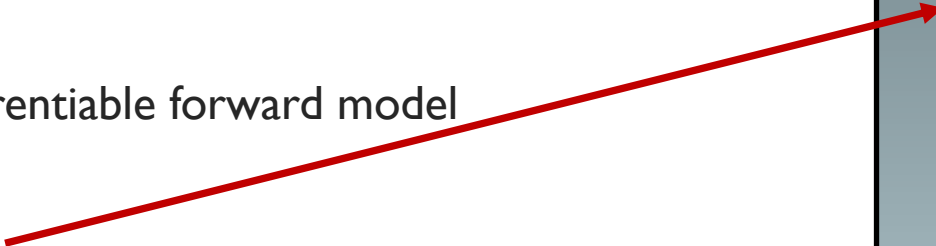
PRINCETON  
UNIVERSITY

# HI-PPL

Spurio Mancini, in prep.

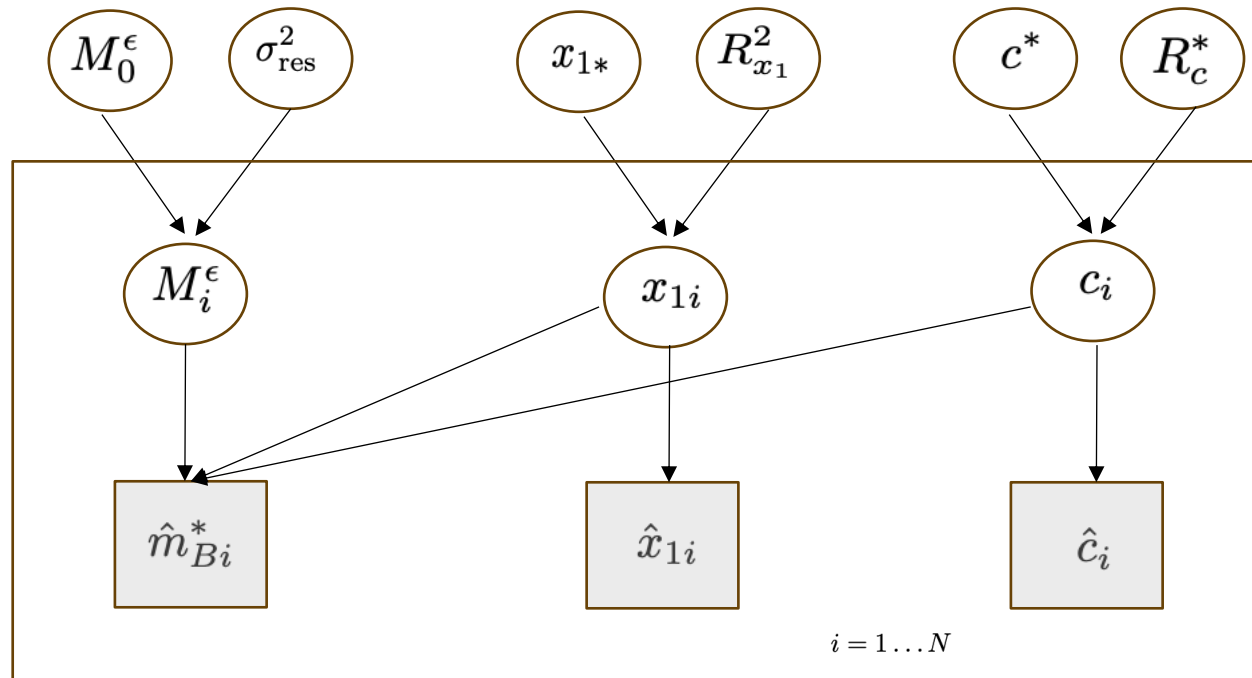
- Novel framework for Hierarchical Inference and Simulation-Based Inference
- Based on JAX + NumPyro → differentiable forward model
- Seamlessly integrates with CosmoPower-JAX (Piras & Spurio Mancini 23) and JaxCosmo (Campagne+ 23)
- Multiple compression techniques: IMNN (Charnock+ 18), score compression (Alsing & Wandelt 18), ... enhanced by differentiable forward model

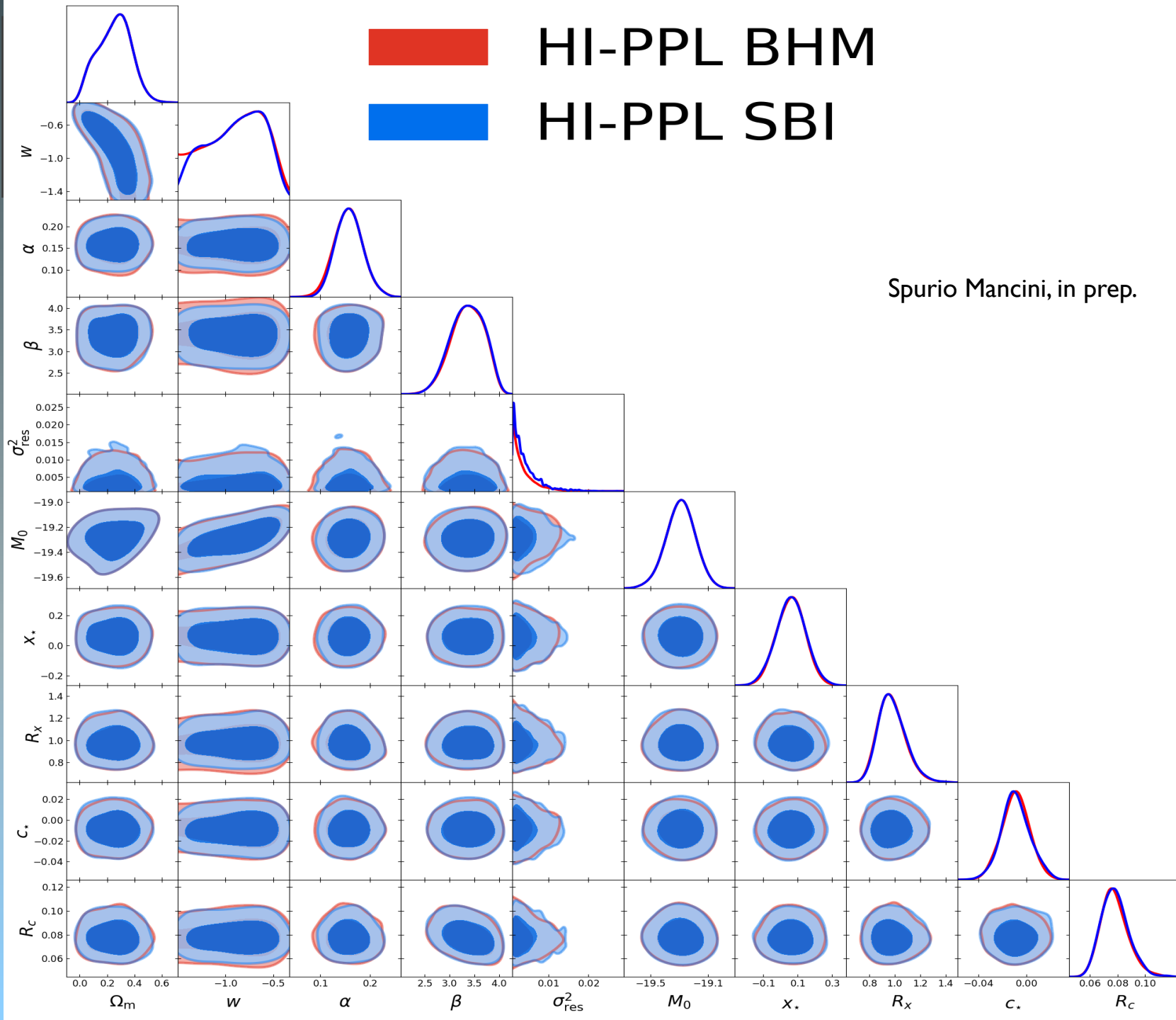
See Davide's poster!



# SUPERNOVAE EXAMPLE

~ Bayesian Hierarchical Modeling for the Analysis of Supernova (BAHAMAS, Shariff+16)





# ADVERTISEMENT 😊

Royal Astronomical Society Discussion Meeting on “Simulation-Based Inference in Astrophysics”

<https://ras.ac.uk/events-and-meetings/ras-meetings/simulation-based-inference-astrophysics>

London, 12<sup>th</sup> January 2024 (hybrid online/in person → free registration required)

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