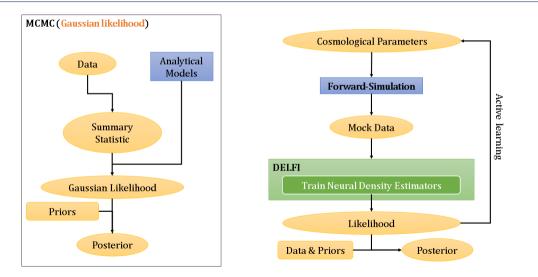
Simulation-Based Inference of KiDS-1000 Cosmic Shear

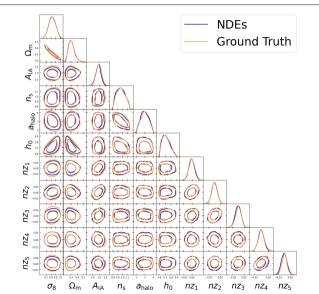
Kiyam Lin, Maximilian von Wietersheim-Kramsta University College London Benjamin Joachimi, Stephen Feeney

April 28, 2023

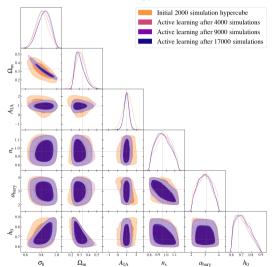
Conventional vs. SBI Analysis



Posterior Contour Comparison

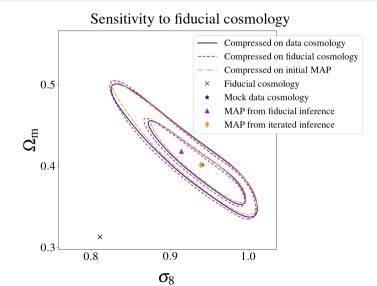


Active Learning

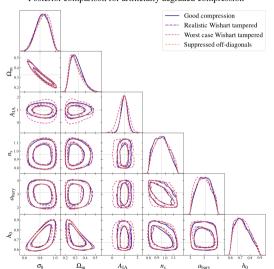


Active learning posteriors

Sensitivity to Fiducial Cosmology

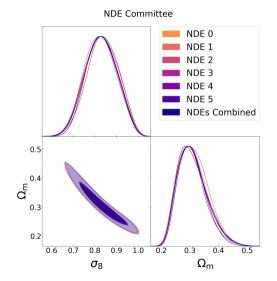


Sensitivity to Compression

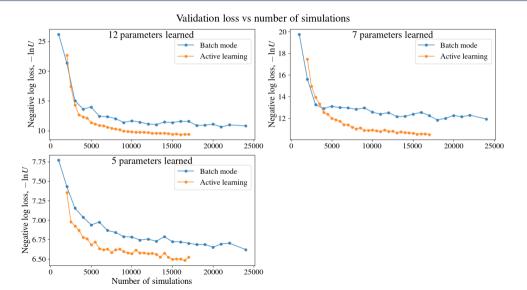


Posterior comparison for artificially degraded compression

PyDELFI



Simulation Number Sufficiency



DELFI References

J. Alsing et al. (2018)

Massive optimal data compression and density estimation for scalable, likelihood-free inference in cosmology

Monthly Notices of the Royal Astronomical Society 2018, Volume 477, Issue 3, Pages 2874–2885.

P. Taylor et al. (2019)

Cosmic shear: Inference from forward models

Physical Review D, APS 2019, Volume 100, Number 2, Pages 023519.

🧾 J. Alsing et al. (2019)

Fast likelihood-free cosmology with neural density estimators and active learning

Monthly Notices of the Royal Astronomical Society 2019, Volume 488, Issue 3, Pages 4440-4458.