

Inference without likelihoods

i.e. “How I learned how to infer parameters with having an access to the analytical formulation of likelihood”

- LFI: Likelihood-free inference, or SBI: simulator based inference
 - ABC: Approximate Bayesian Computation
 - Draw a sample from an approximate posterior
- SL: Synthetic likelihood
 - Approximate the likelihood with a simulated sample

Likelihood-free Inference

(warning: may contain traces of likelihoods)

- Interest lies in a system that is
 - observable
 - controllable via parameters
- Do **not** assume capability to estimate the likelihood function at a parameter value
- Assume capability to simulate data given input parameters from the model
 - Often the methods are $BAYESIAN$