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Title:

Bayesian inference of mathematical singularities in a black hole holographic model.

Abstract:

Bayesian inference is used to determine a set of parameters to find singularities in a modern physics problem. Parameter sets are sampled from a fixed prior, which are then changed to follow in the direction of most improvement. An iterative procedure is conducted where new parameter sets are generated based sampling of the update of the previous parameter set. Previous lattice results will be used as the posterior distribution where our improvement is to be determined by our parameter sets getting closer to these values. Sampling is also a big problem, since we have a high dimensional parameter space, anywhere between 5 and 12 dimensions, for this we use Latin hypercube sampling which allows us to get a representative sampling of the distribution.