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Bayesian Inference for Contemporary Lattice Quantum Field Theory

Friday, 4 August 2023 09:00 (20 minutes)

Bayesian inference provides a rigorous framework to encapsulate our knowledge and uncertainty regarding various physical quantities in a well-defined and self-contained manner. Utilising modern tools, such Bayesian models can be constructed with a remarkable flexibility, leaving us totally free to carefully choose which assumption should be strictly enforced and which should on the contrary be relaxed. The practical evaluation of these assumptions, together with the data-driven selection or averaging of models, also appears in a very natural way.
In this presentation, I will discuss its application in the context of lattice QCD and its common statistical problems. As a concrete illustration, I will present a few parametric and non-parametric hierarchical models applied to actual correlator data.

Topical area

Algorithms and Artificial Intelligence

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