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Practical applications of machine-learned flows on gauge fields

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Normalizing flows are machine-learned maps between different lattice theories which can be used as components in exact sampling and inference schemes. Ongoing work yields increasingly expressive flows on gauge fields, but it remains an open question how flows can improve lattice QCD at state-of-the-art scales. This talk discusses and demonstrates several useful applications which are viable with presently available flows, highlighting replica exchange sampling and a new approach to Feynman-Hellmann calculations.

Topical area

Algorithms and Artificial Intelligence

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