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Unfreezing topology with nested sampling

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We introduce nested sampling as a generic simulation technique to integrate over the space of lattice field configurations and to obtain the density of states. In particular, we apply it as a tool for performing integrations in systems with ergodicity problems due to non-efficient tunneling, e.g., in case of topological freezing or when computing first order phase transitions. As a proof of principle, we show how this technique avoids topological freezing in 2D U(1), allowing us to compute topological charge and susceptibility for a range of usually inaccessible values of β.

Topical area

Algorithms and Artificial Intelligence

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