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# Nested sampling for gauge theories

*Thursday 4 December 2025 09:00 (40 minutes)*

We consider nested sampling as a generic integration technique over the space of lattice gauge configurations. We discuss its advantages in cases where standard simulations are inefficient due to suppressed tunneling between (metastable) states. For example, nested sampling has the potential to overcome topological freezing in simulations at fine lattice spacings and we demonstrate this in the 2D U(1) gauge theory. Another example concerns first order phase transitions where nested sampling can be used to efficiently obtain the density of states. As an example we apply it to the deconfinement transition in the 4d SU(3) gauge theory.

## Special requests

I'm participating only Wednesday and Thursday.

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**Session Classification:** Talks