

Abstract Submitted
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Diagrammatic Monte Carlo¹ KRIS VAN HOUCKE, EVGENY KOZIK, NIKOLAY PROKOF'EV, BORIS SVISTUNOV, University of Massachusetts, Amherst — Diagrammatic Monte Carlo (DiagMC) is a technique that allows one to simulate quantities specified in terms of diagrammatic expansions, the latter being a standard tool of many-body quantum statistics. The sign problem that is typically fatal to Monte Carlo approaches, appears to be manageable with DiagMC. We introduce a general DiagMC scheme, and present results for strongly interacting fermions (Hubbard model). This is the first example of a full-scale many-body problem being solved by diagrammatic Monte Carlo.

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