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Lefschetz-thimble path integral for solving the mean-field sign problem

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Lefschetz-thimble method is a recently developing tool for solving the sign problem. We showed that the sign problem appearing in the mean-field approximation can be completely solved by applying this technique. The manifest reality of the physical observables is shown to be ensured in spite of the complexification of the field variables. The result is demonstrated through the heavy-quark model, and we also discuss some implications to the lattice QCD.

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