

Reweighting Lefschetz Thimbles

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One of the main challenges in simulations on Lefschetz thimbles is the computation of the relative weights of contributing thimbles. In this paper we propose a solution to that problem by means of computing those weights using a reweighting procedure. Besides we present recipes for finding parametrizations of thimbles and anti-thimbles for a given theory. Moreover, we study some approaches to combine the Lefschetz thimble method with the Complex Langevin evolution. Our numerical investigations are carried out by using toy models among which we consider a one-site z^4 model as well as a $U(1)$ one-link model.

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