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Toward Extracting the Scattering Phase Shift from Integrated Correlation Functions in LQCD

Tuesday, 20 August 2024 15:05 (15 minutes)

In this presentation, I will show how the difference of interacting and non-interacting integrated two-particle correlation functions in finite volume is related to infinite volume scattering phase shift through an integral weighted by a factor $\exp(-Et)$. The difference of integrated finite volume correlation functions converge rapidly to its infinite volume limit as the size of periodic box is increased, which offers a suitable framework to overcome the challenges that the Luscher formula faces at large volume limit.

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