



Contribution ID: 13

Type: 3rd week (Nishinomiya-Yukawa symposium)

Learning Hadron Interactions from Lattice QCD and Femtoscopy

Wednesday, October 30, 2024 12:00 PM (30 minutes)

In this study, we delve into nuclear forces governed by Quantum Chromodynamics (QCD) utilizing the HAL QCD method alongside Femtoscopy. These methodologies offer valuable insights into hadron-hadron interactions derived from Lattice QCD simulations and empirical data from collision experiments. I will present our approach of using neural networks to model potential functions, which are learned unsupervisedly from NBS wave functions. This enables the neural networks to represent these potentials in a Schrödinger-like equation for detailed hadron interaction analysis. For Femtoscopy, we initially demonstrate the feasibility of extracting physical potentials from correlation data using a supervised learning approach. In the end, I will introduce the potential for joint learning from both Lattice QCD and Femtoscopy data to enhance our understanding of hadron interactions.

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