

Volume dependence of quantum bound states and resonances

Thursday, 18 January 2024 09:00 (50 minutes)

Simulating quantum systems in a finite volume is a powerful theoretical tool for extracting information about them. The observation that the real-world properties of states are encoded in how their energy levels change with the size of the volume gives rise to a versatile approach that has applications in nuclear physics, hadron physics, and is also relevant for simulations of cold atomic systems. This talk will give an overview of recent progress that has been achieved regarding finite-volume relations for states that correspond to isolated energy levels in infinite volume. In particular, it will discuss the volume dependence of charged-particle bound states and show how the “complex scaling” method can be used to study resonances in finite volume.

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