

# Hamiltonian effective field theory in elongated or moving finite volume

*Wednesday, 18 August 2021 17:25 (15 minutes)*

We extend previous work concerning rest-frame partial-wave mixing in Hamiltonian effective field theory to both elongated and moving systems, where two particles are in a periodic elongated cube or have nonzero total momentum, respectively. We also consider the combination of the two systems when directions of the elongation and the moving momentum are aligned. This extension should also be applicable in any Hamiltonian formalism. As a demonstration, we analyze lattice QCD results for the spectrum of an isospin-2  $\pi\pi$  scattering system and determine the  $s$ ,  $d$ , and  $g$  partial-wave scattering information. The inclusion of lattice simulation results from moving frames significantly improves the uncertainty in the scattering information.

**Primary author:** LI, Yan (University of Chinese Academy of Sciences)

**Co-authors:** THOMAS, Anthony (University of Adelaide); LEINWEBER, Derek (University of Adelaide); 吴佳俊 (University of Chinese Academy of Sciences)

**Presenter:** LI, Yan (University of Chinese Academy of Sciences)

**Session Classification:** Parallel Session II: Hadron and Flavor Physics

**Track Classification:** 2. 强子物理与味物理