Objectives

- Bayesian inference for parameter estimation requires very many expensive calculations of scattering with different parameter sets. Solution: model ("emulate") the calculations.
- Extend the eigenvector continuation (EC) approach for efficient emulators to scattering processes and test on model problems.

Impact

- EC emulators successfully tested for model nucleon-nucleon scattering (top figure); charged-particle scattering (middle); complex, non-local optical potentials (bottom). These figures show small mean errors with moderate basis sizes.

- Success of EC enables development of efficient emulators for realistic optical potentials and three-body scattering.

Accomplishments

R.J. Furnstahl et al., Phys. Lett. B **809**, 135719 (2020).