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Implementing the finite-volume scattering and decay formalism across all three-pion isospin channels

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The formalism for relating finite-volume energies and matrix elements to scattering and decay amplitudes has been established for three-pion states with all possible isospins in the so called RFT (relativistic field theory) method. This necessarily leads to coupled-channel systems. The three-pion $I=1$ channel, for example, includes all two-pion isospins as sub-channels. In this talk I describe issues and strategies in implementing both the scattering and decay formalism in practice and show examples of the relations between finite- and infinite-volume quantities. I also describe an open source python library that supports the practical implementation.

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