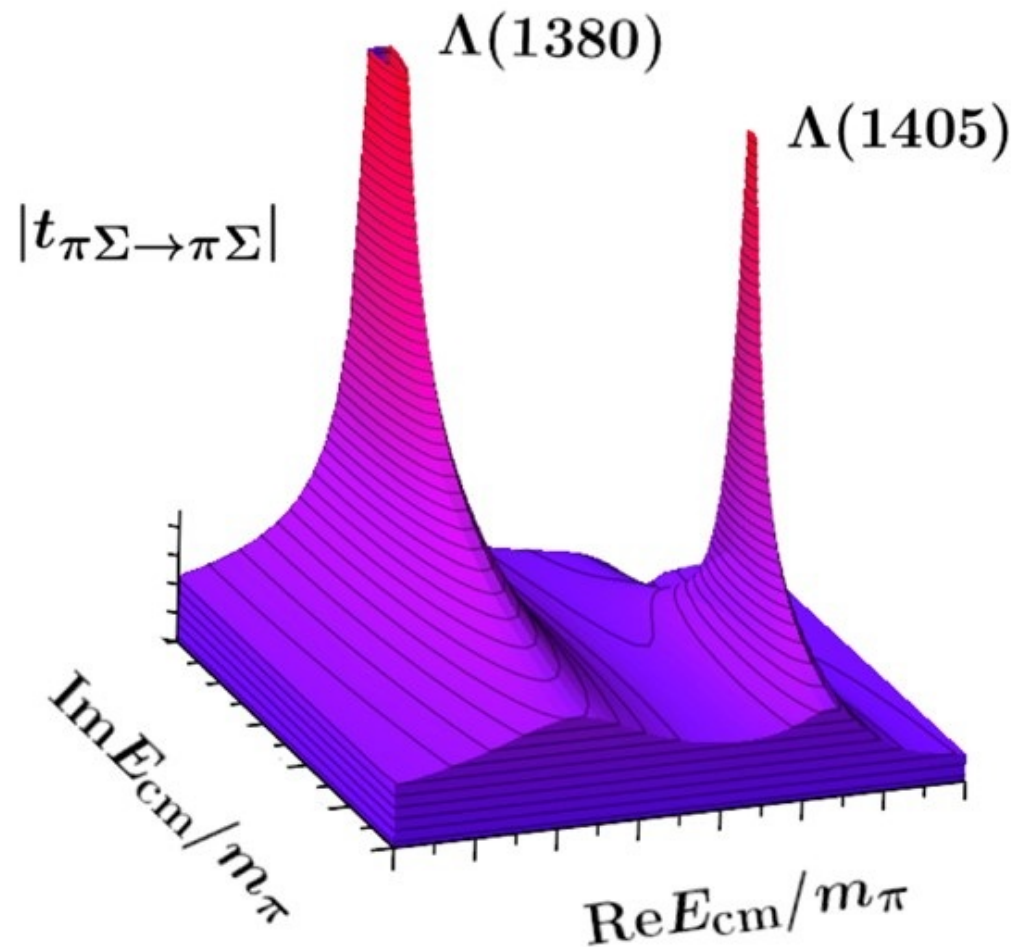


Two-pole nature of the $\Lambda(1405)$



DOE SC Highlight:

Scientists Gain new insights into the nature of the puzzling lambda 1405 hyperon resonance and its controversial partner.

[Phys. Rev. Lett., 132\(5\):051901, 2024.](#)

[Phys. Rev. D, 109\(1\):014511, 2024.](#)

Accomplishment: First LQCD computation of coupled-channel scattering amplitudes and extraction of $\Lambda(1405)$ resonance structure.

Methods: Analysis methods developed under SciDAC.

Impact: Resolving decades-long debate on origin of lightest states in QCD, and providing guidance to JLab experiments.