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Pade approximation of the S-matrix as a way of locating quantum resonances and bound states: two-channel case

We extend the method for locating spectral points generated by central potentials to the multichannel case. The key to the method is the combination of analytic properties of the Jost matrices and rational parametrization of the S-matrix obtained at real collision energies. An explicit derivation of some symmetry properties of the Jost matrices is given. Numerical examples demonstrate the stability and accuracy of the proposed method.

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