

Analysis of Multichannel Resonances with Unitary Breit-Wigner and K-Matrix Approaches and with Effective Range M-Matrix Method

V. Henner

Department of Theoretical Physics, Perm State University, 614990 Perm, Russia

We discuss three methods to obtain the parameters of multichannel resonances from data. The K -matrix method guarantees the unitarity of the S -matrix, but its parameters can be considered as resonances masses and widths only for well-spaced states. It also does not allow to separate the resonant and background contributions in scattering amplitudes. The unitarity of the S -matrix can be guaranteed if Breit-Wigner terms are taken with the proper interference phases. A background can be added to the BW amplitudes in the standard way by using background phases. The multichannel effective range approach is a part of M-matrix method. All these methods can be applied to study NN systems.