



Семинар
«МАЛОЧАСТИЧНЫЕ СИСТЕМЫ»
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аудитория им. Д.И.Блохинцева (IV этаж)

DETERMINING RESONANCE PARAMETERS FROM EXPERIMENTAL CROSS-SECTIONS OF TWO-BODY COULOMB SCATTERING

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A new parametrization of the multi-channel S -matrix in terms of the Jost functions is used to fit two-body Coulomb scattering data. The poles of this matrix are used to locate resonances. The S -matrix is written in terms of the corresponding "in" and "out" Jost matrices which are expanded in the Taylor series of the collision energy, E , around an appropriately chosen energy E_0 . This is only possible if the Jost matrices are written in a semi-analytic form where all the factors responsible for the branching of the Riemann surface of energy are explicitly factorized. The remaining unknown factors in the Jost matrices are analytic and single-valued functions of the energy E and are defined on a simple energy plane. The Taylor expansion is done for these analytic functions, where the expansion coefficients are used as the fitting parameters. The method is tested on a two-channel model using a set of artificially generated data-points with typical error bars and a typical random noise incorporated in the values of the data.