

NUCLEAR-COULOMB LOW-ENERGY
SCATTERING PARAMETERS: EXACTLY
SOLVABLE FINITE-RANGE MODELS

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S u m m a r y

The nuclear-Coulomb low-energy scattering parameters of two charged strongly interacting particles are investigated on the basis of the P -matrix approach. Simple explicit expressions for the nuclear-Coulomb scattering length and effective range are obtained for the first time in terms of the residual P -matrix parameters. A number of exactly solvable finite-range models of strong interaction with hard core is considered on the basis of the obtained expressions, and the nuclear-Coulomb low-energy scattering parameters are found in an explicit form for the boundary condition model, the delta-shell potential with hard core, the Margenau model, and the square-well potential with hard core.