

# RESONATING GROUP EQUATIONS FOR REACTION WITH THREE-BODY CHANNELS

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General form of multichannel resonating group equation is derived from the variational principle for reaction channels with arbitrary particle number. Detailed formalism is elaborated for restricted version of two-channel reaction where the scattering channel is accompanied by 3-body, one due to breakup of a scattering product. Calculated differential cross sections for direct scattering  ${}^6\text{Li}(\alpha, \alpha){}^6\text{Li}$  shows an essential improvement with account of 3-body channel appearing from direct breakup of scattered  ${}^6\text{Li}$ . To obtain the necessary accuracy the calculation requires powerful computing technique.

*Keywords:* resonating group equations, multibody reaction channels, scattering, direct breakup, differential cross sections.