

Analytic continuation methods in nuclear reaction theory and indirect approaches in nuclear astrophysics

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The following topics are discussed in the present review talk.

1. Nuclear vertex constants and asymptotic normalization coefficients, methods of their determination.
2. Normal and anomalous asymptotics of wave functions in binary channels.
3. Phase-equivalent potentials and analytic continuation methods.
4. Indirect methods in nuclear astrophysics (the asymptotic normalization coefficient method, the Trojan Horse method).
5. One- and two-channel effective range expansion with account of the Coulomb interaction.
6. Application of the analytic continuation method of the two-channel effective range expansion to the deuteron and ${}^6\text{Li}$.
7. Account of inelastic channels within the effective range expansion.