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Power series expansion of the Jost function on the complex angular momentum plane.

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The aim of this research is to develop a method for expanding the Jost functions as a Taylor-type power series on the complex angular momentum plane. From this method in conjunction with the Watson transformation, we were able to express the scattering amplitude as a sum of the background and pole terms, furthermore, this method proposes a way of evaluating, numerically, the pole term. To demonstrate how this method may be applied, we considered the Born approximation. We found out that the developed method improved the Born approximation at large scattering angles. Therefore, this method is useful when the differential cross section of the background term fails to converge to that of the exact differential cross section at large scattering angles.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

MSc

Main supervisor (name and email) and his / her institution

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

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