

Abstract Submitted  
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**On the applicability of the Exterior Complex Scaling method for scattering problems including Coulombic potentials** ANCARANI LORENZO UGO, Université Paul Verlaine - Metz, Metz, France, GASANEO GUSTAVO, Universidad Nacional del Sur, Bahia Blanca, Argentina, MITNIK DARIO, Universidad de Buenos Aires, Argentina — We study some formal aspects of the exterior complex scaling approach when implemented for both short and long-range potentials. The method requires an artificial cut-off of the potential in order to avoid exponential divergencies. Preserving the cut-off strategy, we propose alternative proposals to the ECS recipe which lead to a well-defined scattering problem. For a Coulombic long-range two-body potential we carefully analyze the use of a free wave function as asymptotic term, and then propose two variants of distorted-wave reformulation. A numerical illustration is provided. We then study in detail the cut-off procedure and identify some inconsistencies. To avoid them a proposal is put forward and its efficiency is demonstrated with analytical solutions for the pure Coulomb potential.

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