Abstract Submitted
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Merkuriev cutoff below the three-body threshold: practical considerations for bound state and scattering calculations VLADIMIR ROUDNEV, University of Kentucky — Merkuriev regularization is necessary for correct formulation of scattering theory for three charged particles above the three-body threshold [1]. The cutoff procedure of Mercuriev is useful, however, even for studying states below the three-body threshold, for instance three-body bound states and $2 \rightarrow 2$ scattering processes. Even though physical quantities can not depend on the parameters of regularization, we demonstrate that the appropriate choice of the parameters leads to significant acceleration of numerical convergence. It can also be used for constructing simple but accurate models of three-body bound states (such as vibrational states of different isotopes of the H_2^+) and low energy scattering of three charged particles. [1] Merkuriev S P Ann. Phys. **130** 395 (1980)

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