

Abstract Submitted
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Excited states of He_NH^- Clusters¹ PAULO ACIOLI², Physics Department, Northeastern Illinois University, FREDERICO V. PRUDENTE, Instituto de Física, Universidade Federal da Bahia — We use correlation function quantum Monte Carlo (CFQMC) method to compute the excited states of the weakly bonded Helium clusters with the H^- impurity (He_NH^- , $N=1,\dots,5$). The methodology was tested through comparison with previously published results for the ground state of the system with $N=1-11$. Our test basis set consists of a standard pair-product ground state multiplied by a polynomial. Our tests for HeH^- and He_2H^- demonstrated very good agreement with previously published discrete variable representation (DVR) results. We believe the lowest excited states of the larger clusters to be of similar quality and they can reveal important properties of these weakly bound systems, mainly on the effect of the impurity on the cluster and vice versa.

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²On leave from Departamento de Física, Universidade de Brasília, Brazil

Paulo Acioli
Physics Department, Northeastern Illinois University

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