

Abstract Submitted
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Theoretical study of resonances in low-energy collisions of three identical atoms¹ CHI HONG YUEN, VIATCHESLAV KOKOULINE, University of Central Florida — Resonances in low-energy collisions of three identical atoms are studied theoretically using hyperspherical coordinates [1]. Two different methods are used and compared to determine positions and widths of three-body resonances: the complex absorbing potential [2] and eigenchannel R-matrix [3] approaches. Good agreement between the results of the two approaches is found. Cross sections for dimer formation in three-body recombination is determined. For this purpose the formula of Ref. [4] is used (and re-derived). The developed code is applied to study collisions of three hydrogen atoms at low energies. [1] B.R. Johnson, J. Chem. Phys. 73, 10 (1980) [2] J.Blandon, V.Kokoouline, F.Masnou-Seeuws, Phys. Rev. Lett. 75, 042508 (2007) [3] M.Aymar, C.H.Greene, E.Luc-Koenig, Rev. Mod. Phys. 68, 1015 (1996) [4] N.P.Mehta, S.T.Rittenhouse, J.P.D’Incao, J.von Stecher, C.H.Greene, Phys. Rev. Lett. 103, 153201 (2009)

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