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Universal properties of the three-body scattering length and its relation to Efimov physics¹ JOSE P. D'INCAO, JILA, Dept of Physics, University of Colorado, CHRIS H. GREENE, Dept of Physics, Purdue University — In this work we study elastic properties involving three free atoms in the regime in which the interatomic interactions are strongly affected by a Feshbach resonance. Using the hyperspherical adiabatic representation we have determined the corresponding three-body scattering length and explore its connections with the energy levels of three particles in a harmonic trap. In particular, we study the relation between the three-body scattering length and the energy levels in the trap when the two-body scattering length is tuned near a Efimov resonance.

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