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Ultra-cold three-body interactions of multi-level atoms[1] VICTOR COLUSSI, J.P. D'INCAO, Department of Physics and JILA, University of Colorado, Boulder, CHRIS H. GREENE, Department of Physics, Purdue University — We investigate the problem of three bodies interacting via a multichannel generalization of the Fermi pseudo-potential. This work specifically considers the case where each body has access to multiple internal states and thresholds. In this regime of ultra-cold few-body interactions, we analytically explore the unitarity limit for multi-level atoms, looking ultimately for novel instances of Efimov physics. We also model, using this machinery, few-body interactions in spinor Bose-Einstein condensates for a variety of atomic compositions.

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