

Abstract Submitted  
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**Low-energy Behavior of Quantum Defect Parameters for Long-range Potentials**<sup>1</sup> BRANDON RUZIC, JOHN L. BOHN, JILA, Boulder, Colorado — Ultracold collisions of atoms have been successfully described within various versions of quantum defect theory. One particular standardization of long-range reference functions in a van der Waals potential has proven quite useful over a wide range of energy and magnetic field [1]. We extend the use of this standardization to describe a variety of atomic and molecular collisions governed by mixed long-range potentials and explore perturbation theory as a means of describing the low-energy behavior of these parameters. In particular, long-range dipolar forces between polar atoms or molecules may be described in a simplified way. This research is supported by the DOE.

[1] J.P. Burke, Jr., C. H. Greene, and J. L. Bohn, Phys. Rev. Lett. 81, 3355 (1998)

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Brandon Ruzic  
JILA

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