

Abstract Submitted  
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**Resonance phenomena in ultracold dipole-dipole scattering of bosons and fermions.** VLADIMIR ROUDNEV, MICHAEL CAVAGNERO, University of Kentucky — Elastic scattering resonances occurring in ultracold collisions of either bosonic or fermionic polar molecules are investigated. The Born-Oppenheimer adiabatic representation of the two-body dynamics provides both a qualitative classification scheme and a quantitative WKB quantization condition that predicts several sequences of resonant states. It is found that the near-threshold energy dependence of ultracold collision cross sections varies significantly with the particle exchange symmetry, with bosonic systems showing much smoother energy variations than their fermionic counterparts. Resonant variations of the angular distributions in ultracold collisions are also described.

Vladimir Roudnev  
University of Kentucky

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