Abstract Submitted
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Ultracold collisions and reactions of vibrationally excited OH radicals with oxygen atoms[1] JUAN CARLOS JUANES-MARCOS, Department of Chemistry, University of Nevada Las Vegas, GOULVEN QUÉMÉNER, JILA, University of Colorado, Boulder, BRAIN K. KENDRICK, Los Alamos National Laboratory, BALAKRISHNAN NADUVALATH, Department of Chemistry, University of Nevada Las Vegas — We report quantum dynamics calculations of O + OH ($v = 1, j = 0$) collisions on two different representations of the electronic ground state potential energy surface. A time-independent quantum mechanical method has been applied, using hyperspherical coordinates. Probabilities and cross sections are calculated for the elastic, inelastic, and reactive channels, and for $J = 0$ total angular momentum. Results show that the reaction outcome is strongly influenced by long-range forces, and that the competition between vibrational quenching and chemical reactivity is found to be sensitive to the choice of the potential energy surface.

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