Abstract Submitted
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Vibrationally-resolved charge transfer between O^+ ions and H_2 molecules[1] L.B. ZHAO, Department of Physics and Astronomy and the Center for Simulational Physics, University of Georgia, Athens, Georgia 30602-2451, USA, J.G. WANG, Institute of Applied Physics and Computational Mathematics, Beijing 100088, People's Republic of China, P.C. STANCIL, Department of Physics and Astronomy and the Center for Simulational Physics, University of Georgia, Athens, Georgia 30602-2451, USA, Y. LI, R.J. BUENKER, Fachbereich C-Mathematik und Naturwissenschaften, Bergische Universität Wuppertal, D-42097 Wuppertal, Germany, M. KIMURA, Graduate School of Sciences, Kyushu University, Fukuoka 812-8581, Japan — The non-dissociative charge transfer process $O^+ + H_2$ (v) $\rightarrow$ O + H_2^+ (v') has been investigated using the quantal molecular-orbital coupled-channel method. Vibrationally-resolved total and electronic state-selective cross sections based on the infinite order sudden approximation (IOSA) and the electronic approximation (EA) will be presented for relative collision energies from 0.1 to 1000 eV/u. The IOSA and EA results will be compared to the limited previous theoretical work and to the wealth of experimental data for both ground and metastable incident oxygen ions.

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