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Inclusion of two vibrational modes in dissociative electron attachment and vibrational excitation of CF_3Cl revisited[1] MICHAL TARANA, Department of Physics & Astronomy, University of Nebraska Lincoln, 510 Stadium Drive, Lincoln 68588 NE, USA, KAREL HOUFEK, Institute of Theoretical Physics, Charles University Prague, V Holesovickach 2, 18000 Prague, Czech Republic, ILYA I. FABRIKANT, Department of Physics & Astronomy, University of Nebraska Lincoln, 510 Stadium Drive, Lincoln 68588 NE, USA — We present a study of multimode effects in vibrational excitation of CF_3Cl molecule by electron impact as well as in the dissociative electron attachment. We use a time-independent version of the local complex potential theory. Symmetric stretch C-Cl vibrations ν_3 and symmetric deformation (or so-called "umbrella") vibrations ν_2 are included. The approach used in the present study was described previously. The complex potential energy surfaces used in the present calculations were obtained using the ab initio R-matrix method. In our previous study of the dissociative electron attachment we found an increase of the total cross section as compared to one-dimensional calculations. This was explained by an increase of the anion survival probability due to model-like width function used. Our present calculations use the ab initio width and lead to smaller survival probability.

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