DISSOCIATION DYNAMICS OF HYDROGEN-DIHALOGEN COMPLEXES

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Two-color, pump-probe spectroscopy has been used to investigate the vibrational predissociation dynamics of numerous conformers of hydrogen-dihalogen complexes. Specifically, different H_2-ICl(B,v), D_2-ICl(B,v), H_2-I_2(B,v) and D_2-I_2(B,v) intermolecular vibrational levels are prepared. The subsequent ICl(B,v) and I_2(B,v) product-state distributions are then measured with rotational-state resolution. The roles of the geometry of the initially prepared complex and of ortho- and para-H_2 on the dynamics are extracted. Similar experiments were also performed to measure the binding energies of all of the conformers.