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 \( \text{H}_2\text{-ICl}(B,v) \), \( \text{D}_2\text{-ICl}(B,v) \), \( \text{H}_2\text{-I}_2(B,v) \) and \( \text{D}_2\text{-I}_2(B,v) \) intermolecular vibrational levels are prepared. The subsequent \( \text{ICl}(B,v) \) and \( \text{I}_2(B,v) \) 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-\( \text{H}_2 \) on the dynamics are extracted. Similar experiments were also performed to measure the binding energies of all of the conformers.