IR/THZ DOUBLE RESONANCE SPECTROSOCPY ENERGY DYNAMICS AT ATMOSPHERIC PRESSURES

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Recently it has been proposed that IR/THz double resonance (DR) spectroscopy has potential for remote detection of trace gases at atmospheric pressures. Historically, these techniques have been utilized in the investigation of molecular collision dynamics. Understanding the effects of pressure on the energy dynamics of the system aids in the prediction of signatures in remotes sensing applications. We have performed IR/THz DR spectroscopy on a selection of gases and at a variety of pressures. Energy transfer models are utilized to understand the effects of pressure on these dynamics. Latest results will be presented in the context of remote sensing applications and laboratory studies.