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Transient ultrafast coherent spectroscopy of 2-propanol SETH MEISELMAN, MATTHEW DECAMP, Univ of Delaware, VIRGINIA LORENZ, Univ of Illinois at Urbana-Champaign — We use transient coherent spontaneous Raman spectroscopy to measure the coherence lifetimes of vibrational states in liquid propanol. By creating single-photon-level collective excitations of the vibrational states in the system we observe coherence oscillations due to simultaneous excitation of the 2885 cm^{-1}, 2938 cm^{-1}, and 2976 cm^{-1} modes. These lifetimes and oscillation frequencies agree with frequency-domain lineshape measurements.

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