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Vibrational Coupling Pathways in the ν_3 CH Stretch Fundamental Region of Methanol as Revealed by Coherence-Detected FTMW-IR Spectroscopy SYLVESTRE TWAGIRAYEZU, DAVID S. PERRY, Department of Chemistry, The University of Akron, JUSTIN L. NEILL, MATT T. MUCKLE, BROOKS H. PATE, Department of Chemistry, University of Virginia — Rotational state-selection on the methanol E species transitions $2_0 \leftarrow 3_{-1}$ and $2_1 \leftarrow 3_0$ is used to record the infrared (IR) spectra of the connected rotational levels of jet-cooled methanol, CH_3OH and CH_3OD. The observed spectra of CH_3OH contain twelve interacting vibrational bands in the interval 2755-2855 cm^{-1}, whereas a direct state count gives 14 vibrations in this interval grouped into 6 tiers by coupling order. The isotope dependence of the spectra confirms that the dominant coupling pathway is a third order coupling of the CH stretch to a combination of the COH bend and an HCH bend.

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