First detected in 1988, the $\text{-CH}_2$ wagging fundamental of $\text{C}_2\text{H}_5$ recorded at high resolution by diode laser absorption extends from approximately 470 to more than 600 cm$^{-1}$. The mode corresponds to the out-of-plane motion at the radical center and this is strongly coupled to the torsion or internal rotation in this species. We published$^a$ a preliminary analysis of the spectrum in 1996, but at the time recognized many questions remained. Aided by extensive ab initio calculations and the detection$^b$ of part of the spectrum at 3$\mu$m in a jet-cooled sample, we have recently made much progress understanding the details of the 20$\mu$m spectrum and the internal dynamics in the radical. In total, close to 500 transitions have been assigned in 18 rotation-torsion branches. The observation of branches involving levels with $m_{\text{torsion}} = 3$ and low $k_a$, in particular, has allowed much more precise estimates of the barrier to internal rotation and its change on vibrational excitation. Calculations of the torsion/wag potential surface have allowed a physical interpretation of these experimental results.

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