

## THE HIGH RESOLUTION JET COOLED SPECTRUM OF PENTAFLUOROETHANE

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The jet cooled spectrum of pentafluoroethane ( $C_2HF_5$ ) has been recorded between 1100. and 1325.  $cm^{-1}$  at a resolution of 0.0022  $cm^{-1}$ . A rotational temperature of approximately 10 K was achieved by expanding 50 Torr of  $C_2HF_5$  in 500 Torr of helium. Transitions belonging to five different vibrations have been assigned and fit to a Watson Hamiltonian: the  $\nu_3$  at 1309.88  $cm^{-1}$ , the  $\nu_4$  at 1200.74  $cm^{-1}$ , the  $\nu_5$  at 1142.78  $cm^{-1}$ , the  $\nu_{13}$  at 1223.33  $cm^{-1}$ , and the  $\nu_{14}$  at 1147.39  $cm^{-1}$ . The rms deviations of the fits of the  $\nu_4$  band (0.0004  $cm^{-1}$ ) as well as the overlapping  $\nu_5$  (0.0006  $cm^{-1}$ ) and  $\nu_{14}$  (0.0004  $cm^{-1}$ ) bands are in satisfactory agreement with the experimental uncertainty. The perturbations observed by McNaughton et al<sup>a</sup> are still apparent in the  $\nu_3$  and  $\nu_{13}$  at the rotational temperature of this study but satisfactory fits have been achieved.

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<sup>a</sup>D. McNaughton et al., *Vib. Spec.*, **36**, 123 (2004); C. D. Thompson et al., *J. Mol. Spec.*, **230**, 133 (2005).