

Abstract Submitted
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First results from the CLS far-infrared beamline: the ν_{12} and ν_{17} bands of acrolein, CH_2CHCHO ¹ DENNIS TOKARYK, University of New Brunswick, Physics Department, A. ROBERT MCKELLAR, National Research Council of Canada, LI-HONG XU, University of New Brunswick, Saint John, Department of Physical Sciences, DOMINIQUE APPADOO, TIM MAY, Canadian Light Source, University of Saskatchewan — Synchrotron radiation from the new Canadian Light Source facility has been used to obtain a high resolution (0.0012 cm^{-1}) absorption spectrum of acrolein vapor in the $550\text{--}660\text{ cm}^{-1}$ region. Almost 2000 transitions have been included in a detailed analysis of the ν_{12} ($\sim 564\text{ cm}^{-1}$) and ν_{17} ($\sim 593\text{ cm}^{-1}$) fundamental bands, yielding precise values for the band origins, rotational and centrifugal distortion parameters. The analysis included the a- and b-type Coriolis interactions connecting ν_{12} and ν_{17} , as well as an a-type Coriolis interaction between ν_{17} and a “dark” perturbing state, identified as $4\nu_{18}$. We believe that this is the first high-resolution infrared study of acrolein.

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