

Abstract Submitted
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Electronic Transitions and Bandhead fitting for $^{130}\text{Te}_2$ from 664 to 676THz DAVID LA MANTIA, Univ of Oklahoma — The electronic spectra of $^{130}\text{Te}_2$ serves as a wavelength standard for many spectroscopy investigations. The molecule is also of interest for a new gain medium for optically pumped lasers, as well as relativistic investigations of large spin-orbit coupling. We scanned the molecule in the region 664 to 676 THz to create an atlas of transition lines, in line with the previous investigations of *Cariou, et al.*¹ The $\text{BO}_u^+ \leftarrow \text{XO}_g^+$ transition was studied in great detail using the precise data for the X band from *Verges, et al.*² Using this data, the number of vibrational bandheads was identified allowing the rotational parameters B, D and H to be precisely obtained for each bandhead. These results are combined to obtain the appropriate spectroscopic parameters for the B_0 electronic band. The results of this investigation will be presented.

¹Cariou, J. and Luc, P. “Atlas Du Spectre D’Absorption De La Molecule De Tellure.” Laboratoire Aime, Cotton CNRS II 91405 Orsay, France. 1980.

²Verges, J. “The Laser Induced Fluorescence Spectrum of Te_2 Studied by Fourier Transformation Spectrometry.” *Physica Scripta*. Vol.25, 338-350, 1982

David La Mantia
Univ of Oklahoma

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