THE OBSERVATION AND ANALYSIS OF THE PURE ROTATIONAL SPECTRA OF $X0^+$ PtS AND $X0^+$ WO

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Measurements of the pure rotational spectra of 8 isotopomers of PtS using Fourier transform microwave (FTMW) spectroscopy have been reported previously[a]. Pure rotational transitions from 8 isotopomers of WO have been recorded for the first time using FTMW spectroscopy. WO shares the same electronic ground state as PtS, $X0^+$, and modified Dunham-type spectral analyses of the data sets have been performed in parallel for the two molecules. For the analyses abnormally large Born-Oppenheimer breakdown (BOB) terms were required for all of the atoms in order to fit the data to within the experimental uncertainties. The magnitude of these BOB terms will be discussed along with the influence of field-shift effects arising from the Pt and W nuclei on the rotational energy levels. Nuclear spin-rotation constants for ^{195}Pt in PtS and ^{183}W in WO have also been recorded.

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