

## A PRELIMINARY ROTATIONAL ANALYSIS OF THE $\tilde{A}^2\Pi_{3/2} - \tilde{X}^2\Sigma^+$ TRANSITION IN YbOH

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Ytterbium Monohydroxide (YbOH) is a molecule of interest in the search for the electron Electric Dipole Moment (eEDM) due to its large effective internal electric field, high polarizability, and prospects for laser-cooling and molecular trapping. Most of its highly-excited states have only been explored at low resolution by previous experiments, among them a band at 535 nm that was tentatively identified as  $\tilde{A}^2\Pi_{3/2}$  by Melville and Coxon in 2001. We present a preliminary rotational analysis of the YbOH band at 535 nm taken at high-resolution using laser-induced fluorescence. The resulting rotational constant B and centrifugal distortion D differ considerably from those found for the  $\tilde{A}^2\Pi_{1/2}$  state, suggesting that its assignment as the  $\Omega = 3/2$  spin-orbit component of the A state may be incorrect or that it is heavily mixed with another nearby state.