ROTATIONAL SPECTROSCOPY OF $HD^{18}O$

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The recent detection of $HD^{18}O$ in Orion KL[b] by the *Herschel Space Observatory* provided a strong motivation to revisit the rotational spectrum in order to obtain more accurate calculations of transition frequencies. Rotational ransitions were recorded in the $300 - 2700$ GHz frequency range. Analysis of the combined microwave and infrared data sets with an Euler series Hamiltonian[c] has facilitated determination of a set of precise rotational constants to support precision velocity measurements. The new rotational data also provides a means of evaluating the performance of the MARVEL algorithm used in the recent review of all available HDO data[d].

[a] A part of this work was performed at the Jet Propulsion Laboratory, California Institute of Technology under contract with the National Aeronautics and Space Administration. Copyright 2010© California Institute of Technology. All rights reserved.

[b] E. A. Bergin et al., *Astron. Astrophys.* **521**, (L20), 2010.

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[d] J. Tennyson et al. *J. Quant. Spectrosc. Radiat. Transfer* **111**(2160), 2010.