STRUCTURE OF LiOH FROM MICROWAVE SPECTROSCOPY AND *AB INITIO* THEORY

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Measurements of rotational transitions between 100 and 500 GHz are reported for LiOH and LiOD. The observed transitions are compared to transitions calculated by the collocation method using a potential energy surface from an *ab initio* electron structure calculation at the MP4 level. The agreement between theory and experiment is satisfactory and establishes the minimum energy structure to be linear. The calculated potential for bending is found to be relatively flat but no evidence for any nonlinear minimum is found. The equilibrium Li-O internuclear distance calculated is 1.5% greater than observed. This deviation is virtually identical to that found for LiF using the same level of theory.