

## INCORPORATION OF A ROVIBRATIONAL ANALYSIS OF OC-H<sub>2</sub>O INTO 6-D MORPHED POTENTIALS OF THE COMPLEX

LUIS A. RIVERA-RIVERA, SEAN D. SPRINGER, BLAKE A. McELMURRY, *Department of Chemistry, Texas A & M University, College Station, TX, USA*; IGOR I LEONOV, *Microwave Spectroscopy, Institute of Applied Physics, Nizhny Novgorod, Russia*; ROBERT R. LUCCHESI, JOHN W. BEVAN, *Department of Chemistry, Texas A & M University, College Station, TX, USA*; L. H. COUDERT, *LISA, CNRS, Universités Paris Est Créteil et Paris Diderot, Créteil, France*.

Rovibrational transitions associated with tunneling states in the water bending vibration in OC-H<sub>2</sub>O and other available spectroscopic data are included in generation of 6-D morphed potentials of the complex. Six-dimension *ab initio* interaction potentials are initially calculated for the complex to provide the initial functions for the potential morphing. The available spectroscopic data is then used to fit and generate 6-D morphed potentials. Previous prediction of the  $D_0$  of the complex will be incorporated in the analysis. Finally, intermolecular frequencies of the complex will be predicted using the 6-D morphed potentials involving the CO stretching and the H<sub>2</sub>O bending vibrations.