

CAN ONE DETERMINE THE ELECTRIC DIPOLAR MOMENT OF ArH^+ FROM FREQUENCY DATA?

J. F. OGILVIE, *Centre for Experimental and Constructive Mathematics, Department of Mathematics, Simon Fraser University, 8888 University Drive, Burnaby, British Columbia V5A 1S6 Canada.*

In a paper presented at this symposium in 2001 and subsequently published^a, Molski claimed to have determined the electric dipolar moment of ArH^+ from only frequency data involving pure rotational and vibration-rotational transitions. Careful analysis of all available data confirms that, although a rough value of the rotational g factor might be estimated that agrees with both experiment through the Zeeman effect and quantum-chemical calculations, no sensible value of electric dipolar moment can be analogously derived^b because isotopic data are too few and all data lack sufficient precision and consistency. Molski's treatment^a involves an incorrect formula that might have contributed to his erroneous conclusion.

^aM. Molski, *Chem. Phys. Lett.* **342**, 293–299 (2001)

^bJ. F. Ogilvie, *Chem. Phys. Lett.* **348**, 447–453 (2001)