

Abstract Submitted  
for the GEC10 Meeting of  
The American Physical Society

**Pressure-dependent negative ion mobilities in H<sub>2</sub>O and its mixtures with Ar and N<sub>2</sub>**<sup>1</sup> JAIME DE URQUIJO, RUIZ-VARGAS GERARDO, National University of Mexico — We have used a pulsed Townsend technique to measure the mobility of negative ions of H<sub>2</sub>O in parent gas and in the mixtures of H<sub>2</sub>O with N<sub>2</sub> and Ar. The E/N range of measurement was 10-40 Td, while the partial pressure of H<sub>2</sub>O was varied up to 18 torr. For a mixture of given composition, we have observed a well defined dependence of the mobility of the ionic species with total gas pressure. Besides, we have found that the measurement of the mobilities at a single pressure and several mixture ratios follow Blanc's law closely. These findings are indicative of negative-ion cluster formation, the sizes of which increase with the total pressure of the mixture. The identity of the drifting ions has not yet been assessed.

<sup>1</sup>Work supported by Project IN 108508 PAPIIT-UNAM.

Jaime de Urquijo  
National University of Mexico

Date submitted: 22 Jun 2010

Electronic form version 1.4