Pressure-dependent negative ion mobilities in H$_2$O and its mixtures with Ar and N$_2$\textsuperscript{1} 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$_2$O in parent gas and in the mixtures of H$_2$O with N$_2$ and Ar. The E/N range of measurement was 10-40 Td, while the partial pressure of H$_2$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.

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