

Abstract Submitted  
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**Cross sections for Scattering and Mobility of  $\text{OH}^-$  and  $\text{H}_3\text{O}^+$  ions in  $\text{H}_2\text{O}$** <sup>1</sup> ZORAN PETROVIC<sup>2</sup>, VLADIMIR STOJANOVIC, DRAGANA MARIC, Institute of Physics, University of Belgrade, POB 68, Zemun, Serbia, JASMINA JOVANOVIC, Faculty of Mechanical Engineering, University of Belgrade, Belgrade, Serbia — Modelling of plasmas in liquids and in biological and medical applications requires data for scattering of all charged and energetic particles in water vapour. We present swarm parameters for  $\text{OH}^-$  and  $\text{H}_3\text{O}^+$ , as representatives of principal negative and positive ions at low pressures in an attempt to provide the data that are not yet available. We applied Denpoh-Nanbu procedure to calculate cross section sets for collisions of  $\text{OH}^-$  and  $\text{H}_3\text{O}^+$  ions with  $\text{H}_2\text{O}$  molecule. Swarm parameters for  $\text{OH}^-$  and  $\text{H}_3\text{O}^+$  ions in  $\text{H}_2\text{O}$  are calculated by using a well tested Monte Carlo code for a range of  $E/N$  ( $E$ -electric field,  $N$ -gas density) at temperature  $T = 295$  K, in the low pressure limit. Non-conservative processes were shown to strongly influence the transport properties even for  $\text{OH}^-$  ions above the average energy of 0.2 eV ( $E/N > 200$  Td). The data are valid for low pressure water vapour or small amounts in mixtures. They will provide a basis for calculating properties of ion-water molecule clusters that are most commonly found at higher pressures and for modelling of discharges in liquids.

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