

# Charge exchange in collisions of protons with water molecules

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## Abstract

Charge exchange in  $H^+ + H_2O$  collisions was investigated theoretically at projectile energies below 50 keV/amu. The electron nuclear dynamics (END) method was used to analyze the collision process. Total and differential cross section were calculated averaging over particular orientations of the water molecule. Comparison of the present charge exchange cross section with experimental data shows a good agreement for energies between 10 and 50 keV/amu. At energies below 10 keV/amu, there is a discrepancy between the present theoretical calculation and the experimental data.