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Charge exchange in $C^{6+} + H$ and $C^{6+} + H_2$ collisions[1] NICOLAIS GUEVARA-LEON, BIDHAN SAHA, Florida A&M University, JOHN R. SABIN, ERIK DEUMENS, N.Y. OHRN, University of Florida — In the solar wind, C^{6+} ion is one of the most abundant ionic species and its interaction with comets as well as the atmosphere of planets of the solar system produces several interesting phenomena. The charge exchange reaction is one of the most relevant process as it may provide a possible explanation for the X-ray emission from these objects. Electron capture into a highly excited state of C^{5+} ion usually generates radiation in the X-ray region of the spectrum. In the present work, charge exchange in $C^{6+}+H$ and $C^{6+}+H_2$ collisions are investigated theoretically using electron nuclear dynamics (END) [1] at projectile energies below the ionization threshold. For H_2 the one- and two- electron charge exchange cross sections are calculated and compared with other theoretical and experimental data. Orientation effects for the collision with the hydrogen molecules will also be discussed at the conference.

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