Slow Collisions of Si3+ with Atomic Hydrogen 1 D.C. JOSEPH, J.-P. GU, B.C. SAHA, Department of Physics, Florida A&M University, Tallahassee, FL-32307, H.P. LIEBERMANN, P. FUNKE, R.J. BUENKER, Bergische Universität, Wuppertal D-42096 Wuppertal, Germany — Low energy electron capture from hydrogen atom by multi-charged ions continues to be of interest and applications include both magnetically confined fusion and astrophysical plasmas. The charge exchange process reported here, Si3+ + H → Si2+ + H+ is an important destruction mechanism of Si3+ in photo-ionized gas. The soft X-ray emission from comets has been explained by charge transfer of solar wind ions, among them Si3+, with neutrals in the cometary gas vapor. The state selective cross sections are evaluated using the full quantum [1] and semi-classical molecular orbital close coupling (MOCC) [2] methods. Adiabatic potentials and wave functions for a number of low-lying singlet and triplet states of and symmetry are calculated with the MRD-CI package [3]. Details will be presented at the conference.


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