

THEORETICAL TREATMENT OF CHARGE TRANSFER PROCESSES OF RELEVANCE TO ASTROPHYSICS¹

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Charge transfer is an important process in many astrophysical and atmospheric environments. While numerous experimental and theoretical studies exist for H and He targets, data on other targets, particularly metals and molecules, are sparse. Using a variety of theoretical methods and computational techniques, we are developing methods to estimate the cross sections for electron capture (charge transfer) in slow collisions of low charge state ions with heavy (Mg, Ca, Fe, Co, Ni, and Zn) neutrals. In this ongoing work particular attention is paid to ascertaining the importance of double electron capture.

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