GEC10-2010-000623

Abstract for an Invited Paper
for the GEC10 Meeting of
the American Physical Society

Measuring accurate electron-molecule cross-sections for Plasma simulation[1]

MICHAEL ALLAN, University of Fribourg

An infrastructure has been built to measure absolute electron-atom (molecule) cross sections for elastic scattering, vibrational and electronic excitation and dissociative attachment. Emphasis is on low- energy capacity, entire range of scattering angles, low background and good resolution. Examples presented:

- CO: Elastic and vibrational excitation, differential and integral cross sections, in connection with simulations of planetary atmospheres of L Campbell and M Brunger.

- HCN and C_2H_2: Absolute dissociative electron attachment cross sections, in connection with *ab initio* 3-dimensional calculations of A E Orel and S T Chourou.

- HCl and HBr: Absolute dissociative electron attachment cross sections, in connection with nonlocal resonance calculations of J Fedor, M Cizek, V McKoy and coworkers.

- Kr: Absolute elastic and electronic excitation cross sections, in connection with B-spline R-matrix calculations of K Bartschat and O Zatsarinny.

In collaboration with Olivier May and Dusan Kubala, University of Fribourg.

[1]Supported by the Swiss NSF and the COST Action CM0601.