Abstract Submitted
for the DAMOP10 Meeting of
The American Physical Society

Multichannel quantum-defect theory for electron-atom interactions with application to the atomic fine and/or hyperfine changing collisions by electron impact[1] BO GAO, University of Toledo, ALEXANDER DALGARNO, ITAMP — We present a general multichannel quantum-defect theory for electron-atom interactions. It provides, in particular, a rigorous formulation for atomic fine and/or hyperfine changing collisions by electron impact. The theory is applied here to the hyperfine transition of atomic hydrogen by electron impact to show that the traditional elastic approximation fails for electron energies comparable to the hyperfine splitting.

[1]Supported by NSF

Bo Gao
University of Toledo

Date submitted: 16 Jan 2010 Electronic form version 1.4