Abstract Submitted
for the DAMOP09 Meeting of
The American Physical Society

Collisions of O+ with He at low energies DWAYNE C. JOSEPH, B.C. SAHA, Department of Physics, Florida A&M University, Tallahassee, FL-32307, L.B. ZHAO, Department of Physics, College of William and Mary, Williamsburg, VA-23185 — We have investigated the following charge transfer process$O^+(^4S^0, ^2D^0, ^2P^0) + He \rightarrow O(^3P) + He^+ - \Delta E$ using the full quantum [1] and semi-classical molecular [2]orbital close-coupling (MOCC) approximations. The quantum MOCC equations are solved numerically in the adiabatic representation [3]. Using MRD-CI package [4] the *ab initio* configuration interaction calculation is carried out for potential energies. Details of our findings will be reported in the conference. [1] B. H. Bransden and M. R. C. McDowell, "Charge Exchange and the Theory of Ion-Atom Collisions", Clarendon Press, Oxford, 1992. [2] M. Kimura and N. F. Lane, At. Mol. Opt. Phys 26, 79 (1990). [3] J. P. Braga and J. C. Belchoir, J. Comput. Chem 17, 1559 (1996). [4] R. J. Buenker, "Current Aspects of Quantum Chemistry 1981, Vol 21, edited by R. Carbo (Elsevier, Amsterdam), p 17.

Bidhan Saha
Department of Physics, Florida A&M University, Tallahassee, FL-32307

Date submitted: 24 Jan 2009 Electronic form version 1.4