Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

A SOL and Divertor Plasma Calculation Model W.M. STACEY, Georgia Tech — A computationally tractable calculation of the tokamak SOL and divertor is being developed to provide background edge plasma parameters for neutral atom transport codes, separatrix boundary conditions on the electrostatic potential and plasma flows for pedestal calculations, edge "boundary conditions" for core transport codes, etc. The 1D parallel particle, momentum, energy, current and electrostatic potential balance equations are solved in a strip connecting inner and outer divertor target plates, subject to sheath boundary conditions. Perpendicular ExB and gradB/curvature drifts and currents associated with the latter are included. The calculation provides poloidally dependent distributions of the density, temperature, parallel flow and electrostatic potential at the separatrix, from which a number of other quantities may be estimated.

W.M. Stacey
Georgia Tech

Date submitted: 22 Jul 2008 Electronic form version 1.4