

Meeting: 1001, Evanston, Illinois, SS 6A, Special Session on Nonlinear Partial Differential Equations and Applications

1001-35-40 **M. Slemrod*** (slemrod@math.wisc.edu), M. Slemrod, Math Dept., U-W Madison, Madison, WI 53706. *Plasma sheaths and their dynamics.*

This talk reviews work of M. Feldman, S-Y Ha, and M. Slemrod on a geometric level set approach to the plasma sheath. A plasma sheath is a boundary layer which occurs when a negative high voltage is applied to target object immersed in a plasma of hot electrons and cold ions. The talk emphasizes how this boundary layer may be modeled as a layer with a sharp edge with the edge being defined in terms of level sets. (Received July 13, 2004)