**Continuum-kinetic approach to sheath simulations**[1] PETR CAGAS,
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VANA SRINIVASAN, Virginia Tech — Simulations of sheaths are performed using
a novel continuum-kinetic model with collisions including ionization/recombination.
A discontinuous Galerkin method is used to directly solve the Boltzmann-Poisson
system to obtain a particle distribution function. Direct discretization of the dis-
tribution function has advantages of being noise-free compared to particle-in-cell
methods. The distribution function, which is available at each node of the config-
uration space, can be readily used to calculate the collision integrals in order to
get ionization and recombination operators. Analytical models are used to obtain
the cross-sections as a function of energy. Results will be presented incorporating
surface physics with a classical sheath in Hall thruster-relevant geometry.

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Date submitted: 15 Jul 2016 Electronic form version 1.4