

Abstract Submitted  
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**Effects on sheath dynamics of electron reflection from a material boundary**<sup>1</sup> KOLTER BRADSHAW, BHUVANA SRINIVASAN, Virginia Tech —  
When a plasma sheath forms next to a dielectric wall, material properties influence electron absorption and reflection from the surface, impacting the sheath formation and structure. This interaction may be modeled from quantum mechanical first principles. This work implements the resulting reflection function as a boundary condition in continuum kinetic sheath simulations using direct discretization of the Vlasov-Maxwell equations. The discontinuous Galerkin method is used with the Gkeyll code in this work. The resulting sheath dynamics are examined in parameter regimes relevant to Hall thruster and fusion applications using multiple wall materials.

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