Abstract Submitted
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Fluid and kinetic plasma modeling of redeposition regimes[1] J.M. CANIK, ORNL, X. TANG, LANL — Strong redeposition of eroded material from plasma-facing components (PFC) is required in a fusion reactor to ensure long PFC lifetimes. Reaching redeposition regimes depends on the plasma conditions near the PFC surface, as well as the surface material itself. Here we present plasma modeling of experiments performed at the PISCES device studying the erosion properties of Be surfaces that have been produced via seeding to simulate the redeposition process [Doerner, Nucl. Fusion **52** (2012) 13033]. Initial modeling has utilized the SOLPS code [Schneider, Contrib. Plasma Phys. **46** (2006) 3], which treats the plasma as a fluid, and can simulate the long-range transport of eroded impurities. To treat the effect of the magnetic sheath near the surface, which can dominate the prompt redeposition characteristics of heavy PFC materials including W, requires a kinetic plasma simulation, and is being addressed using the VPIC code [Bowers, Phys. Plasmas **15** (2008) 055703]. Results from the fluid plasma modeling will be presented, and the coupling of the VPIC and SOLPS codes will be discussed.

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