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Impurity Analysis and Modeling of DIII-D Radiating Mantle Discharges¹ J. MANDREKAS, W.M. STACEY, Georgia Institute of Technology, M. MURAKAMI, M.R. WADE, Oak Ridge National Laboratory, G.L. JACKSON, General Atomics — Predictive simulations of recent radiating mantle DIII-D discharges with non-intrinsic seeded impurities such as Ne, Ar and Kr, have been carried out. These L-mode and ELMing H-mode discharges often exhibit confinement improvement following the impurity injection. The simulations are performed with the 1-1/2D transport code GTWHIST, which has the capability to calculate the transport of all the charge states of several impurity species along with the main plasma particle and energy transport. The importance of neoclassical effects on the impurity transport, as well as the effect of the enhanced edge radiation on the edge pedestal pressure, the edge pressure gradient, and bootstrap current are also discussed.

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Prefer Oral Session
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Special instructions: DIII-D Poster Session 1, immediately following NH Brooks

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