Sorting Category: 6.6.2 (Computation/Simulation)

Modeling Neutral Recycling and Fueling in DIII-D in Open and Closed Divertor Configurations With and Without Pumping[1] W.M. STACEY, Georgia Inst. of Technol., T.W. PETRIE, GA — The neutral transport model we have used to calculate neutral recycling and fueling in DIII-D has been extended to represent the new upper single null (closed) divertor configuration with pumps inboard and outboard. The extensions include: 1) representation of the full chamber geometry (rather than modeling only the outboard regions and assuming symmetry) in the neutral transport calculation; and 2) development of geometric factors to calculate the fractions of the neutral fluxes exiting from the recycling regions, the divertor plasma channels, and the private flux and plenum regions that enter the pumps. The neutral transport calculation is coupled to a SOL/divertor plasma calculation and plasma core power and particle balance calculation, so the limiting line-average density, MARFE onset edge density and other features for a given divertor/pumping/fueling configuration can be calculated. We report analysis of recent high density experiments in closed and open divertor configurations with and without pumping.

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☐ Prefer Oral Session
☒ Prefer Poster Session

Special instructions: 8th poster in Divertor Session (before Evans, after Lisgo)

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