

Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

UEDGE modeling of snowflake divertors in NSTX-U¹ O. IZACARD, F. SCOTTI, V.A. SOUKHANOVSKII, M.E. RENSINK, T.D. ROGNLIEN, M.V. UMANSKY, LLNL — New UEDGE code capabilities have been developed for simulations of snowflake (SF) divertors (SF-plus/SF-minus) with NSTX-U simulated equilibria. A robust grid generator for SF magnetic configurations including nonorthogonal plate geometries has been developed. UEDGE convergence is achieved on SF grids with a secondary X-point. Different SF-minus and SF-plus geometries are compared with each other permitting various physics studies such as investigating the effects of leg lengths or plate geometries using different impurity and transport models. The results include: (i) Leg lengths of a SF-minus affect the distribution of the parallel velocity, core performance (temperature) and detachment for a fixed fraction impurity model. (ii) Heat flux at the additional strike point in a SF-minus geometry is observed without enhancing the transport. (iii) Radiation front moves further away from divertor plates for shorter legs. Post-processing analyses are performed via a UEDGE module under OMFIT.

¹Work performed for U.S. DoE by LLNL under Contract DE-AC52-07NA27344.

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Date submitted: 20 Jul 2016

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