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Comparison Between Experiments and EMC3-Eirene Simulations of the Snowflake Divertor in TCV[1] G.P. CANAL, EPFL-CRPP, T. LUNT, IPP-Garching, Y. FENG, IPP-Greifswald, H. REIMERDES, B.P. DUVAL, B. LABIT, W.A.J. VIJVERS, S. CODA, EPFL-CRPP, T.W. MORGAN, FOM Institute DIFFER, F. NESPOLI, EPFL-CRPP, B. TAL, WIGNER RCP, G. DE TEMMERMAN, FOM Institute DIFFER — In reactor-size machines like DEMO, conventional divertor solutions are not expected to be sufficient to keep the heat load within the operating limits of the plasma-facing components. The "snowflake" (SF) divertor has emerged as a potential way to reduce the heat loads. EMC3-Eirene simulations of the plasma- and neutral particle-transport in the scrape-off layer of SF plasmas were performed for various distances between primary and secondary X-points. Anomalously large cross-field transport coefficients had to be chosen to match the experimental particle and heat flux profiles at the primary strike points. Although these profiles are well matched, the heat fluxes at the strike points in the private flux region are underestimated compared to those obtained experimentally, suggesting an additional cross-field transport mechanism not included in the simulation. The model also predicts the formation of a high density plasma blob at the primary X-point for small distances between X-points, which has not yet been seen experimentally, further supporting the hypothesis of an additional cross-field transport mechanism. The influence of particle drifts on the particle and heat flux profiles will be discussed.

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G.P. Canal
EPFL-CRPP

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