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Category Number and Subject: 5.6.2. DIII-D Tokamak

Theory Experiment

The Influence of High Field Side Recycling and Impurity Sources on Divertor Detachment in Simulations of Ohmic Discharges of the ASDEX Upgrade and DIII-D Tokamaks,*

M. Wischmeier, A. Kallenbach, A.V. Chankin, D. Coster, R. Dux, J. Harhausen, H.W. Müller and the ASDEX Upgrade Team, *IPP Garching*; M. Groth, *LLNL*; X. Bonnin, *LIMHP* – In the framework established under the International Tokamak Physics Activity (ITPA) Divertor and SOL working group a series of ohmic discharges with similar plasma parameters have been performed in ASDEX Upgrade and in DIII-D. The SOLPS code is tested against these experimental data at the onset of divertor detachment. The presentation focuses on identifying numerically the impact of divertor geometry, target material composition as well as high field side (HFS) recycling and impurity sources on the onset and degree of detachment along the inner target. Physics processes to explain the observed asymmetry between the inner and outer target ion fluxes with increasing line-averaged density are discussed.

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