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[ ] Theory [X] Experiment

Snowflake Divertor Configuration Studies in DIII-D Tokamak,* V.A. Soukhanovskii, S.L. Allen, M.E. Fenstermacher, C.J. Lasnier, M.A. Makowski, A.G. McLean, W.H Meyer, *LLNL*; E. Kolemen, *PPPL*; R.J. Groebner, A.W. Hyatt, A.W. Leonard, T.H. Osborne, T.W. Petrie, *GA* – Recent DIII-D studies show that the snowflake (SF) divertor enables significant manipulation of divertor heat transport for power exhaust in attached and radiative divertor conditions, between and during edge localized modes (ELMs), while maintaining good H-mode confinement. Results include: 1) Increased scrape-off layer (SOL) width suggesting enhanced divertor heat transport; 2) Direct measurements of divertor null-region poloidal beta $\beta_p >> 1$ in support of the theoretically proposed instability mechanism leading to fast convective plasma redistribution, especially efficient during ELMs, and contribution to 1); 3) Weak effect on pedestal profile and stability resulting in essentially unchanged ELM regime; 4) Reduction of Type-I ELM energy loss; 5) In radiative SF divertor regimes with D_2 seeding, a significant reduction of peak heat fluxes between and during ELMs, as in standard H-modes.

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