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ELM Energy Transport in DIII-D[1] A.W. LEONARD, R.J. GROEBNER, T.H. OSBORNE, M.A. MAHDAVI, General Atomics — The scaling of ELM energy lost from DIII-D plasmas is explored as a function of edge pedestal characteristics. The spatial profile of energy lost from the pedestal is measured for regular, repeating ELMs with the DIII-D Thomson scattering diagnostic by ordering the data in time with respect to the nearest ELM. Fitting the evolution of the edge electron temperature and density produces a pedestal profile just before and just after an ELM. The energy lost from the pedestal can be represented by convected Δn, and conducted, ΔT, energy. The conducted energy is a significant fraction of the ELM total energy at low density, but this fraction becomes smaller at high density. A model is explored where the ELM instability effectively opens field lines allowing parallel transport into the SOL and divertor. Processes that control the parallel energy loss include ELM duration, effective parallel length, flux limits to conduction, parallel convective transport time and sheath limits to the target heat flux. Implications of the DIII-D data with respect to these processes will be explored.

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☐ Prefer Oral Session
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