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Characteristics of the Secondary Divertor on DIII-D[1] J.G. WATKINS, Sandia National Laboratory, C.J. LASNIER, Lawrence Livermore National Laboratory, A.W. LEONARD, T.E. EVANS, General Atomics, R. PITTS, ITER, P.C. STANGEBY, University of Toronto, J.A. BOEDO, R.A. MOYER, D.L. RUDAKOV, University of California-San Diego — In order to address a concern that the ITER secondary divertor strike plates may be insufficiently robust to handle the incident pulses of particles and energy from ELMs, we performed dedicated studies of the secondary divertor plasma and scrape-off layer (SOL). Detailed measurements of the ELM energy and particle deposition footprint on the secondary divertor target plates were made with a fast IR camera and Langmuir probes and SOL profile and transport measurements were made with reciprocating probes. The secondary divertor and SOL conditions depended on changes in the magnetic balance and the core plasma density. Larger density resulted in smaller ELMs and the magnetic balance affected how many ELM particles coupled to the secondary SOL and divertor. Particularly striking are the images from a new fast IR camera that resolve ELM heat pulses and show spiral patterns with multiple peaks during ELMs in the secondary divertor.

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J.G. Watkins
Sandia National Laboratory

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