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Divertor Target Plate Conditions During ELM Suppression Experiments using Resonant Magnetic Perturbations on DIII-D[1] J.G. WATKINS, Sandia National Laboratory, T.E. EVANS, General Atomics, R.A. MOYER, D.L. RUDAKOV, University of California, San Diego, C.J. LASNIER, Lawrence Livermore National Laboratory — This paper describes the target plate plasma conditions measured by a fixed array of Langmuir probes during ELM suppression experiments on DIII-D using resonant magnetic perturbations. At high collisionality, the target plate particle flux drops by 30%, the temperature drops by 50%, and the probe floating potential (V_f) goes to zero across the floor when the perturbation coil is energized. In low collisionality, after the ELMs are suppressed, the target plate particle flux profile broadens and increases by about 50%. The electron temperature at the plate increases and the V_f goes negative at the outer strike point and positive at the inner strike point when the ELMS go away. The background (between ELMs) heat flux calculated from the probe data increases $\sim$100% after the ELMs are suppressed but the (5X) larger peaks associated with ELMS are no longer present. A steady-state, ELM-free, heat flux is desirable for actively cooled fusion reactor target plates.

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