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Measurements of Flows in the DIII-D Divertor by Mach Probes¹ J.A. BOEDO, R. LEHMER, R.A. MOYER, UC, San Diego, J.G. WATKINS, Sandia National Laboratories, D.N. HILL, Lawrence Livermore National Laboratory — Measurements of flow velocity in the lower divertor region were performed in the DIII-D tokamak using Mach pins mounted on a fast scanning probe array. Measurements for upper single null (USN) discharges, where the mach pins probe the stagnation point; are compared to measurements performed during lower single null (LSN) discharges in a variety of locations. Flows are directed towards the nearest divertor surface for non-detached LSN divertor conditions. The flow near the floor has a Mach number of near one. The flows in the private region can be close to sound speed even near the X-point; this could be related to a large ionization source at the X-point or in the private region. Data from a double probe can be used in combination with a Mach pin to provide mach numbers. Different models for the derivation of the Mach number will be evaluated and their dependence on T_i/T_e will be evaluated.

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