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Doppler Shift Measurements of Plasma Flow in the DIII-D Divertor¹ N.H. BROOKS, General Atomics, R.C. ISLER, Oak Ridge National Laboratory, G.R. MCKEE, U. of Wisconsin, S. TUGARINOV, TRINITY Institute — To explain the extended region of low electron temperature (1–2 eV) measured in highly radiating divertor plasmas on DIII-D, convective transport of energy has been proposed as a necessary addition to the standard divertor model of conduction-dominated transport.² Experimental verification of this convective plasma flow motivated us to add five toroidal viewchords and two wavelength reference channels to the array of vertical viewchords already coupled to DIII-D's high-resolution divertor spectrometer. From the relative spectral offset between emission line profiles in poloidal and toroidal view, the doppler shifts have been measured at various points along the outer divertor leg with a velocity sensitivity of approximately 2×10^3 m/s. These shifts are interpreted in terms of toroidal flow along the magnetic field direction and compared with Mach probe measurements of the same quantity.

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²A.W. Leonard *et. al.*, Phys. Rev. Lett., June 1997, to be published.

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