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A Method for Measuring Poloidal Rotation in the DIII-D Tokamak[1] C. CHRYSTAL, K.H. BURRELL, General Atomics, W.M. SOLOMON, B.A. GRIERSON, Princeton Plasma Physics Laboratory — A new method of inferring poloidal rotation by combining charge exchange measurements of impurity tangential rotation on the high- and low-field side of the magnetic axis has been developed on DIII D [1]. This method has the advantage of not requiring the calculation of atomic physics corrections to account for the energy dependent charge exchange cross section, and it has been used in conjunction with charge exchange measurements of impurity poloidal rotation from the vertical charge exchange views to investigate poloidal rotation in DIII-D plasmas. Measurements of poloidal rotation have been made for a large range of temperature, toroidal field, and toroidal rotation. In addition, poloidal rotation has been measured during the formation of an internal transport barrier, and the dependence of poloidal rotation on normalized collisionality has been investigated. Comparisons with the neoclassical theory of poloidal rotation will be made.

[1] C. Chrystal, *et al.*, Rev. Sci. Instrum. **83**, 10D501 (2012)

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