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Impurity transport driven by parallel velocity shear instabilities. WEIXIN GUO, LU WANG, Huazhong University of Science Technology — The instability driven by large parallel velocity shear (PVS) is by D'Angelo and P. J. Catto. CT-6B tokamak also reported the existence of PVS driven turbulence in the edge plasma. There are also extensive theoretical investigations, especially, the momentum-energy transport [1], thermal transport [2] as well as inward particular transport [3] are studied, but impurity (non-hydrogenic ions) transport in plasmas with large PVS is never addressed. Impurity accumulation in internal transport barrier (ITB) discharges is reported in JET, JT-60U and DIII-D, especially for the heavier or metal impurities. What's more, the PVS instability has also been discussed in ITB plasmas [4-6]. Therefore, the PVS turbulence could be a mechanism for mitigating the degree of impurity accumulation in ITB plasmas. The present paper thus studied the impurity effects on PVS instability and the associated impurity transport. References: [1] Dong J Q et al 1994 Phys. Plasmas 1 3250. [2] Dimits A et al 2001 Nucl. Fusion 41 1725. [3] Kosuga Y et al 2015 Plasma and Fusion Research 10 3401024. [4] Garbet X et al 2002 Phys. Plasmas 9 3893. [5] Kim S S et al 2011 Nucl. Fusion 51 073021. [6] Dong J Q et al 1998 Phys. Plasmas 5 4328.

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