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**Laser Blow Off and Impurity Entrainment in CSDX**[1] JORDAN JAMES GOSSELIN, SAIKAT THAKUR, GEORGE TYNAN, UC San Diego — Material migration in tokamaks is especially important when considering the lifetime of plasma facing components. However, the flow geometry in the scrape off layer can be complex and diagnostic access is limited. To study the impurity transport in a simple geometry, a laser blow off apparatus was installed on the Controlled Shear Decorelation eXperiment (a 3m long linear helicon source operated plasma machine with an electron temperature of 4 eV and density of $10^{13}$ per $cm^3$). The parallel velocity and diffusion coefficients for the impurity are determined by modeling the impurity injection with the 1-D advection-diffusion equation. The parallel velocity of the impurity cloud found with the model agrees very well with laser induced fluorescence (LIF) measurements of the parallel plasma ion velocity. This indicates that the bismuth impurities are fully entrained in the plasma, which is consistent with classical collisional theories.

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