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Z-dependence of Transport in the Core and SOL of DIII-D¹ M.R. WADE AND THE DIII-D TEAM, Oak Ridge National Laboratory — Measurements during impurity transport studies on DIII-D indicate a strong Z-dependence of impurity in both the core plasma and SOL. For example, a distinct Z-dependence of core transport parameters has been observed in VH-mode plasmas while there is a lack of Z-dependence in L-mode and H-mode plasmas. This observation is consistent with a transition from anomalous-dominated transport in L-mode and H-mode to neoclassical-like transport in VH-mode plasmas. In the SOL, studies using simultaneous gas puffing and divertor exhaust (*i.e.*, puff and pump) indicate a strong Z-dependence in the obtained enrichment of helium, neon, and argon, with the enrichment of argon reaching value ~ 15 . Further analysis of these results as well as a comparison with theory will be presented.

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