

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

***S/XB* measurements for Mo I and W I lines** D. NISHIJIMA, R.P. DOERNER, M.J. BALDWIN, UCSD, A. POSPIESZCZYK, A. KRETER, FZJ, D.G. WHYTE, MIT — In the spectroscopic method to determine sputtered impurity influxes, the ionization events per photon (*S/XB*) value is essential to convert the line emission intensity into a particle flux [1]. However, experimental data of *S/XB* values for Mo I are scarce and for W I sometimes inconsistent. In the linear divertor simulator PISCES-B, we have determined *S/XB* values of Mo I and W I lines by measuring the line emission of sputtered atoms by He or Ar plasma bombardment. While our measured values for the Mo I transition of $z\ ^7P^o \rightarrow a\ ^7S$ (379.8, 386.4, 390.3 nm) are systematically $\sim 2\text{-}3x$ lower than theoretical values, agreement for other transitions is more satisfactory. For the W I line at 400.8 nm, we reported that our values of $\sim 100\text{-}200$ were $\sim 5\text{-}10x$ larger than previously reported experimental data at electron temperature > 10 eV [2]. Our recent measurements provide *S/XB* ~ 55 at higher electron density, where the geometrical loss flux from the plasma column is further reduced. Supported by the US DOE contract No. DE-FG02-07ER54912.

[1] A. Pospieszczyk et al., J. Phys. B **43**, 144017 (2010). [2] D. Nishijima et al., Phys. Plasmas **16**, 122503 (2009).

Daisuke Nishijima
UCSD

Date submitted: 08 Jul 2010

Electronic form version 1.4