Abstract Submitted
for the DAMOP09 Meeting of
The American Physical Society

Excitation energies, radiative and autoionization rates, dielectronic satellite lines, and dielectronic recombination rates for excited states of Mg-like W from Na-like W[1] U.I. SAFRONOVA, A.S. SAFRONOVA, University of Nevada, Reno, P. BEIERSDORFER, LLNL — Energy levels, radiative transition probabilities, and autoionization rates for $2p^6 3l'nl$ ($n = 3 - 13$) and $2p^6 4l'nl$ ($n = 4 - 7$), and $2p^5 3l'3l''nl$ ($n = 3 - 4$) states in Mg-like tungsten are calculated using the COWAN, HULLAC, and RMBPT codes. Autoionizing levels above the thresholds $2p^6 3l$ and $2p^6 4l$ are considered. Branching ratios relative to the first threshold and intensity factors are calculated for satellite lines, and dielectronic recombination (DR) rate coefficients are determined for the first excited states.Contributions to DR rate coefficients from the excited $2p^6 3l'nl$ states with $n \geq 14$ and $2p^6 4l'nl$ states with $n \geq 8$, and additionally from core-excited $2p^5 3l'3l''nl$ states with $n \geq 5$ are estimated by extrapolation of all atomic parameters. The total DR rate coefficient is derived. These data as well as theoretical satellite spectra are important for L-shell diagnostic of very high-temperature laboratory plasmas such as future ITER plasmas

[1]This research was sponsored by the grant DE-FG02-08ER54951 and in part by the NNSA under Cooperative agreement DE-FC52-06NA27588. Work at LLNL was performed under auspices of the DOE under contract No.DE-AC52-07NA2344.

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Date submitted: 21 Jan 2009 Electronic form version 1.4