Abstract Submitted
for the DAMOP05 Meeting of
The American Physical Society

Dielectronic recombination rate coefficients to excited states of O III from O IV and dielectronic satellite lines U.I. SAFRONOVA, University of Nevada, Reno, YU. RALCHENKO, National Institute of Standards and Technology, I. MURAKAMI, T. KATO, D. KATO, National Institute for Fusion Science, Japan — Energy levels, radiative transition probabilities, and autoionization rates for C-like oxygen (O^{2+}) including $1s^22s^22pnl$, $1s^22s2p^2nl$, and $1s^22p^3nl$ (n=2-8, $l \leq n-1$) states are calculated by relativistic Hartree-Fock method with configuration interaction (Cowan code). Autoionizing levels above the thresholds $1s^22s^22p\ ^2P$, $1s^22s2p^2\ ^4P$, ^2D, ^2S,^2P, and $1s^22p^3\ ^4S$, ^2D are considered as well. The branching ratios relative to the first threshold and intensity factors are calculated for dielectronic satellite lines, and the dielectronic recombination rate coefficients are found for the excited 218 odd-parity and 218 even-parity states. The total dielectronic recombination rate coefficient is derived as a function of electron temperature, the contribution from the excited states with $n > 8$ being estimated by extrapolation of all atomic characteristics. The state-selective dielectronic recombination rate coefficients to excited states of C-like oxygen are calculated as well, which makes the present results especially useful for modeling the O III spectral lines in a recombining plasma. This work was supported in part by DOE/NNSA under UNR grant DE-FC52-01NV14050.

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Date submitted: 26 Jan 2005 Electronic form version 1.4