

Abstract Submitted  
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**Photoionization of  $\text{Ne}^{8+}$**  M.S. PINDZOLA, SH. A. ABDEL-NABY, Department of Physics, Auburn University, Auburn, Alabama 36849, USA, F. RO-BICHEAUX, Department of Physics, Purdue University, West Lafayette, Indiana 47907, USA, J. COLGAN, Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, USA — Single and double photoionization cross sections for  $\text{Ne}^{8+}$  are calculated using a non-perturbative fully relativistic time-dependent close-coupling method. A Bessel function expansion is used to include both dipole and quadrupole effects in the radiation field interaction and the repulsive interaction between electrons includes both the Coulomb and Gaunt interactions. The fully correlated ground state of  $\text{Ne}^{8+}$  is obtained by solving a time-independent inhomogeneous set of close-coupled equations. Propagation of the time-dependent close-coupled equations yields single and double photoionization cross sections for  $\text{Ne}^{8+}$  at energies easily accessible at advanced free electron laser facilities.

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