Abstract Submitted
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Relativistic configuration interaction calculations of $n = 3-3$ transition energies in highly-charged tungsten ions[1] M.H. CHEN, K.T. CHENG, Lawrence Livermore National Laboratory — Tungsten is a focus of recent fusion research as it is a promising material for plasma-facing components in future magnetic confinement fusion reactors such as the ITER. To understand its influence as a plasma impurity, reliable energy calculations are needed for many ionic stages of tungsten as they show up in relevent emission spectra. In this work, relativistic configuration interaction calculations are carried out for a few $n = 3 - 3$ transitions in Ne-like to Ar-like tungsten. These calculations are based on the no-pair Hamiltonian and use B-spline orbitals as basis functions. QED corrections as calculated from first principle are also included. Results of this work are compared with other theories and with recent EBIT measurements of the $n = 3 - 3$ spectral lines of Ne-like to K-like tungsten [J. Clementson and P. Beiersdorfer, Phys. Rev. A **81**, 052509 (2010)].

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K. T. Cheng
Lawrence Livermore National Laboratory

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