

Energy Levels of Highly Ionized Ar XIV

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Abstract: With the Breit interaction and quantum electrodynamics corrections considered, relativistic configuration interaction calculations have been carried out in the extended optimal level scheme using multi-configuration Dirac-Fock wave functions on the 204 energy levels and electric dipole transitions of Ar XIV. The results of electric dipole transitions are in good agreement with experiments. Among the energy levels calculated, the lowest 125 levels are in good agreement with available experimental and other theoretical ones, and the other 79 levels are new ones obtained by the present work. This wide range of atomic energy levels is useful in astrophysics and plasma physics.

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Key words: Ar XIV, energy level, MCDF, relativistic configuration interaction

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