TABLES OF ELECTRON ENERGY EIGENVALUES, DENSITIES NEAR ZERO AND MEAN VALUES IN SELF-CONSISTENT FIELDS OF ATOMS AND IONS

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The tables contain quantities calculated in self-consistent fields of atoms and ions. Self-consistency was achieved in a relativistic variant of the Hartree-Fock-Slater method with allowance for the finite dimensions of the nucleus. The calculations were performed, both with and without Letter's correction, for many atoms and ions from helium to plutonium ($2 \leq Z \leq 94$). In the tables are presented electron energy eigenvalues, the coefficients $\tilde{N}$ associated with electron density $\varrho(r)$ near zero ($\tilde{N} = N \cdot 137.0388^{-(2j-1)}$, where $N = \lim 4\pi\varrho(r)r^{-(2j-1)}$ for $r \to 0$) and the mean values of the potential energy and the degrees of the radius r^n ($n = -3, -1, 1, 2$) and also the total energy of the atom. Singly charged positive and negative ions and multiply ionized atoms were considered. In individual cases, computational results are presented for several different electron configurations of the same element.

The tables are published as LIYaF preprints:

for the elements $2 \leq Z \leq 52$ - Preprint 90, 1974;

for the elements $53 \leq Z \leq 63$ - Preprint 91, 1974;

for the elements $64 \leq Z \leq 94$ - Preprint 92, 1974.