

GROUND-STATE PROPERTIES OF EVEN-EVEN NUCLEI IN THE RELATIVISTIC MEAN-FIELD THEORY¹

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The ground-state properties of 1315 even-even nuclei with $10 \leq Z \leq 98$ have been calculated in the framework of the relativistic mean-field (RMF) theory. The Lagrangian parametrization NL3 was used in the calculations. Pairing correlations are accounted within the Bardeen-Cooper-Schrieffer (BCS) approach. The calculated values for the total binding energy, rms proton radius, rms neutron radius, rms charge radius, neutron quadrupole moment, proton quadrupole moment, charge (proton) hexadecapole moment, quadrupole deformation parameter, and hexadecapole deformation parameter are given in Table I. The RMF predictions for some rare-earth nuclei have been compared with the available experimental information.

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