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

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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 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 of some rare-earth nuclei have been compared with the available experimental information. © 1999 Academic Press

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INTRODUCTION

The development of theoretical models that are able to successfully reproduce and predict the ground-state properties and other properties of finite nuclei throughout the periodic table is of great importance in nuclear-structure studies. A good description of the properties of known nuclei also gives us more confidence in extrapolating to the yet unexplored areas of the nuclear chart. Of course, these extrapolations are based upon the respective *ansatz* of a model which is usually obtained by fits to the sets of available nuclear properties near the β-stability line. There exist several such theoretical models in the literature. Chief among these are the various mass models [1]. The Finite-Range Droplet Model (FRDM) [2, 3] and the Extended Thomas–Fermi with Strutinsky Integral Model (ETFSI) [4] are two of the currently best-known mass models. In both cases, attempts have been made to obtain the best possible description of nuclear masses and deformation properties.

Fully self-consistent calculations within the mean-field theory with suitable relativistic or nonrelativistic effective interactions are a preferred alternative approach. However, the computation time required for such calculations, especially for the number of nuclei approaching the scopes of the above-mentioned mass models, is huge. Therefore, one has to limit these calculations to a smaller number and, at the same time, exploit those symmetries of the mean field that can reduce the computation time. Recently, deformed Hartree–Fock (HF) + Bardeen–Cooper–Schrieffer (BCS) calculations with the Skyrme SIII force [5] have been reported for the ground-state properties of 1029 even–even nuclei [6]. This work [6] is the first such extensive calculation within the nonrelativistic mean-field approach. The purpose of the present work is to provide the first systematic study of the ground-state properties of even–even nuclei over a very wide range of isospin within the relativistic mean-field (RMF) theory [7–9].

The RMF theory has recently enjoyed considerable success in describing various facets of nuclear-structure properties. With a very limited number of parameters, this theory is able to give a quantitative description of the ground-state properties of spherical and deformed nuclei at and away from the line of β stability [10, 11]. It has been shown that the anomalous kink in the isotope shifts of Pb nuclei and the anomalous isotopic shifts in the Sr and Kr chains can be explained by the RMF microscopic calculations [12, 13]. Such anomalous behavior is a generic feature of almost all isotopic chains in the rare-earth region [14]. Good agreement with experimental data has been found recently also for collective excitations such as giant resonances [15, 16] and for twin bands in rotating superdeformed nuclei [17]. Similarly, good descriptions of the superdeformed rotational bands in the $A = 140$–150 region and in the rare-earth region have been provided by the cranked RMF calculations [18–20]. Very recently it has also been shown that constrained RMF calculations reproduce the excitation energies of superdeformed minima relative to the ground state in ^{194}Hg and ^{194}Pb [21] very well.

In the RMF theory, the saturation and the density dependence of the nuclear interaction are obtained by a balance between a large, attractive, scalar σ-meson field and a large, repulsive, vector ω-meson field. The asymmetry component is provided by the isovector $\vec{\rho}$ meson. The nuclear interaction is, hence, generated by the exchange of various mesons between nucleons in the framework of the mean field. The spin–orbit interaction arises naturally in the RMF theory as a result of the Dirac structure of nucleons.

Relativistic Mean-Field Theory

In the RMF theory, the nucleons are described as relativistic particles moving independently in average potentials determined in a self-consistent way by the exchange of mesons. The relativistic single-particle equation is the Dirac equation. In contrast to the nonrelativistic Schrödinger equation, which contains one average potential represented usually by a Saxon–Woods shape and an independently fitted spin–orbit potential represented as the derivative of a Saxon–Woods shape, the Lorentz structure of the Dirac equation allows in principle several types of fields:

(a) The vector field ($V_0(\mathbf{r})$, $\mathbf{V}(\mathbf{r})$), which is four-dimensional in space-time and which behaves like a four-vector under Lorentz transformations, is similar in structure to the electromagnetic potentials ($A_0(\mathbf{r})$, $\mathbf{A}(\mathbf{r})$) of Maxwell, well known from the Dirac equation in atomic physics. This vector field contains a time-like component $V_0(\mathbf{r})$, which corresponds to the Coulomb field $A_0(\mathbf{r})$, and three space-like components $\mathbf{V}(\mathbf{r})$, which are equivalent to the magnetic potential $\mathbf{A}(\mathbf{r})$ in electrodynamics. Assuming time-reversal invariance, we can neglect currents and the corresponding space-like parts $\mathbf{V}(\mathbf{r})$. We are then left with the time-like part $V(\mathbf{r})$ (for simplicity we neglect the index 0 henceforth). The Lorentz structure of the theory implies that this time-like part of the vector fields is repulsive. As we will see, the essential part of this field is determined by the short-range repulsion of the nucleon–nucleon interaction caused by the exchange of vector mesons.

(b) In addition to the vector fields, familiar from atomic physics, the Dirac equation in nuclear physics allows a scalar field $S(\mathbf{r})$, which behaves like the rest mass and stays invariant under Lorentz transformations. The Lorentz structure of the theory requires scalar fields to be attractive. Hence, the scalar field can simulate economically the attractive part of the nucleon–nucleon interaction at intermediate distances. On a more basic level, the attraction is caused in large part by correlated two-pion exchange and by two-pion exchange with a Δ-particle in the intermediate state. Both processes lead to a parity-conserving mean field, which is simulated by the scalar field. In principle, the Lorentz structure could allow a pseudoscalar field originated by the one-pion exchange. However, this part has to vanish, because it is well known that the nuclear mean field is parity-conserving. Therefore, the pion contributes on the Hartree level only via the two-pion exchange.

Neglecting nuclear magnetism (that is, assuming time-reversal invariance of the mean field), we then have a stationary Dirac equation containing only the time-like part of the vector field V and the scalar potential S:

$$\{\alpha\mathbf{p} + V(\mathbf{r}) + \beta[m + S(\mathbf{r})]\}\psi_i = \epsilon_i\psi_i. \tag{1}$$

This equation contains the four-dimensional Dirac matrices α and β. The rest mass of the nucleon is denoted by m. Expressed in terms of the Pauli spin matrices, this Dirac equation reads

$$\begin{pmatrix} m + S + V & \sigma\mathbf{p} \\ \sigma\mathbf{p} & -m - S + V \end{pmatrix}\begin{pmatrix} f \\ g \end{pmatrix}_i = \epsilon_i\begin{pmatrix} f \\ g \end{pmatrix}_i. \tag{2}$$

The single-particle wave functions ψ_i are four-dimensional spinors, which describe stationary states of the nucleons with index i and single-particle energy ϵ_i. By summing over the occupied orbitals, we can use these wave functions to calculate two types of densities, (i) the usual density

$$\rho(\mathbf{r}) = \sum_{i=1}^{A} \psi_i^+\psi_i = \sum_{i=1}^{A} f_i^+(\mathbf{r})\, f_i(\mathbf{r}) + g_i^+(\mathbf{r})\, g_i(\mathbf{r}), \tag{3}$$

which is the zero component of the four-dimensional relativistic current vector, and (ii) the scalar density

$$\rho_s(\mathbf{r}) = \sum_{i=1}^{A} \bar{\psi}_i\psi_i = \sum_{i=1}^{A} f_i^+(\mathbf{r})\, f_i(\mathbf{r}) - g_i^+(\mathbf{r})\, g_i(\mathbf{r}). \tag{4}$$

In the *no-sea* approximation [8], these sums do not include the negative-energy solutions of Eq. (2). The fields $V(\mathbf{r})$ and $S(\mathbf{r})$ are obtained by averaging over the interactions induced by the exchange of vector and scalar mesons with the corresponding densities

$$V(\mathbf{r}) = \int v_v(\mathbf{r}, \mathbf{r}')\rho(\mathbf{r}')d^3r', \tag{5}$$

$$S(\mathbf{r}) = \int v_s(\mathbf{r}, \mathbf{r}')\rho_s(\mathbf{r}')d^3r'. \tag{6}$$

The two-body interactions $v_v(\mathbf{r}, \mathbf{r}')$ and $v_s(\mathbf{r}, \mathbf{r}')$ are of the Yukawa type. They correspond to the exchange of scalar mesons σ (isoscalar) and vector mesons ω (isoscalar) and $\vec{\rho}$ (isovector), where the fields are defined as

$$S(\mathbf{r}) = g_\sigma\sigma(\mathbf{r}), \tag{7}$$

$$V(\mathbf{r}) = g_\omega\omega(\mathbf{r}) + g_\rho\rho_3(\mathbf{r}) + A_0(\mathbf{r}), \tag{8}$$

in which $\sigma(\mathbf{r})$, $\omega(\mathbf{r})$, $\rho_3(\mathbf{r})$ are the classical meson fields and $A_0(\mathbf{r})$ is the Coulomb field having its origin in the exchange of photons. The equations of motion for the meson fields are the Klein–Gordon equations

$$(-\Delta + m_\sigma^2)\sigma(\mathbf{r}) = \mathrm{g}_\sigma\rho_s(\mathbf{r}), \tag{9}$$

$$(-\Delta + m_\omega^2)\omega(\mathbf{r}) = g_\omega\rho(\mathbf{r}), \tag{10}$$

$$(-\Delta + m_\rho^2)\rho_3(\mathbf{r}) = g_\rho(\rho_n(\mathbf{r}) - \rho_p(\mathbf{r})), \tag{11}$$

$$-\Delta A_0(\mathbf{r}) = e\rho_c(\mathbf{r}), \tag{12}$$

where $\rho_n(\mathbf{r})$, $\rho_p(\mathbf{r})$, and $\rho_c(\mathbf{r})$ are the neutron, proton, and charge density distributions, respectively, and ρ_c is obtained from the corresponding ρ_p by a convolution with the intrinsic charge structure of the proton. Bearing in mind that the Green's functions of these equations are of the Yukawa and Coulomb types, we obtain for the interactions

$$v_s(\mathbf{r},\mathbf{r}') = -\frac{g_\sigma^2}{4\pi}\frac{e^{-m_\sigma|\mathbf{r}-\mathbf{r}'|}}{|\mathbf{r}-\mathbf{r}'|}, \tag{13}$$

$$v_v(\mathbf{r},\mathbf{r}') = \frac{g_\omega^2}{4\pi}\frac{e^{-m_\omega|\mathbf{r}-\mathbf{r}'|}}{|\mathbf{r}-\mathbf{r}'|} + \vec{\tau}\vec{\tau}'\,\frac{g_\rho^2}{4\pi}\frac{e^{-m_\rho|\mathbf{r}-\mathbf{r}'|}}{|\mathbf{r}-\mathbf{r}'|} + \frac{e^2}{4\pi}\frac{1}{|\mathbf{r}-\mathbf{r}'|}, \tag{14}$$

where $\vec{\tau}$ are the isospin matrices.

This set of coupled equations for relativistic nucleons moving in classical meson fields are Euler equations obtained from Hamilton's variational principle based on the relativistic Lagrangian density of the Walecka model [7],

$$\begin{aligned}\mathscr{L} = {} & \bar{\psi}(i\gamma\cdot\partial - m)\psi + \frac{1}{2}(\partial\sigma)^2 - \frac{1}{2}m_\sigma^2\sigma^2 - \frac{1}{4}\Omega_{\mu\nu}\Omega^{\mu\nu} \\ & + \frac{1}{2}m_\omega^2\omega^2 - \frac{1}{4}\vec{R}_{\mu\nu}\vec{R}^{\mu\nu} + \frac{1}{2}m_\rho^2\vec{\rho}^{\,2} - \frac{1}{4}F_{\mu\nu}F^{\mu\nu} \\ & - g_\sigma\bar{\psi}\sigma\psi - g_\omega\bar{\psi}\gamma\cdot\omega\psi - g_\rho\bar{\psi}\gamma\cdot\vec{\rho}\vec{\tau}\psi \\ & - e\bar{\psi}\gamma\cdot A\,\frac{(1-\tau_3)}{2}\,\psi,\end{aligned} \tag{15}$$

where $\Omega^{\mu\nu}$, $\vec{R}^{\mu\nu}$, and $F^{\mu\nu}$ are field tensors and the dots abbreviate a scalar product in Minkowski space ($\gamma\cdot\omega = \gamma^u\omega_\mu = \gamma_0\omega_0 - \vec{\gamma}\vec{\omega}$).

Using the experimental masses m, m_ω, and m_ρ for the nucleons and the ω and ρ mesons, we are left with only four parameters, m_σ, g_σ, g_ω, and g_ρ, which are adjusted to the experimental data in a few spherical nuclei. It was recognized quite early that this simple model is not flexible enough to describe quantitatively the properties of real nuclei. An effective density dependence was introduced [22] in replacing the quadratic σ-potential $\frac{1}{2}m_\sigma^2\sigma^2$ in the Lagrangian by a quartic potential $U(\sigma)$ including a nonlinear σ self-interaction

$$U(\sigma) = \frac{1}{2}m_\sigma^2\sigma^2 + \frac{1}{3}g_2\sigma^3 + \frac{1}{4}g_3\sigma^4, \tag{16}$$

with the additional two parameters g_2 and g_3. This change leads to a nonlinear Klein–Gordon equation (9) with a σ-dependent mass $m_\sigma^2(\sigma) = m_\sigma^2 + g_2\sigma + g_3\sigma^2$, which has to be solved by iteration. More details on the RMF formalism can be found in Refs. [7–10].

If we want to calculate only the ground-state properties of nuclei, why is it necessary to use a relativistic formulation? In fact, the kinetic energies and the Fermi momenta are relatively small compared to the rest mass of the nucleons. Therefore, relativistic kinematics can be neglected. However, the Dirac equation contains more. In contrast to an equivalent Schrödinger equation with a potential of depth ~50 MeV, which is also small compared to the nucleon rest mass of 938 MeV, the Dirac equation contains two potentials $V(\mathbf{r})$ and $S(\mathbf{r})$, which are both large (~350 and ~400 MeV), opposite in sign, and nonnegligible compared to the nucleon rest mass. Therefore, one needs relativistic dynamics to describe the interplay of these two strong potentials properly. From Eq. (2), we see that in the upper equation for the large components, only the difference between the absolute values of V and S enters, which is, in fact, small compared to the nucleon rest mass. In the lower equation for the small components, however, the large sum of both potentials, $|V| + |S|$, enters. This term cannot be neglected, and its introduction leads to the strong spin–orbit term in nuclear physics. In fact, it is the advantage of the RMF theory that the strength and the shape of the spin–orbit term are determined in a fully self-consistent way. Because the proper size of the spin–orbit splitting plays a crucial role in understanding the basic properties of nuclei, it follows that a proper treatment of the relativistic dynamics is warranted as is done in the RMF theory. Another example for the importance of relativistic dynamics is the fact that the near equality (but opposite sign) of V and S leads to approximate pseudospin symmetry in nuclear spectra [23].

Finally, we emphasize the fact that the smallness of $V + S$ leads to relatively small Fermi momenta and allows, in principle, a nonrelativistic reduction of the Dirac equation to a Schrödinger equation with momentum-dependent potentials. Therefore, a nonrelativistic theory with additional spin- and momentum-dependent terms and adjustable parameters can also provide a reliable description of nuclei. However, in general, such a theory requires more parameters, and its predictive power is probably reduced as compared to that of a fully relativistic theory.

Calculational Details

In this work, the Dirac equation for nucleons is solved using the method of oscillator expansion, as described in Ref. [24]. For the determination of the basis wave functions, an axially symmetric harmonic-oscillator potential with size parameters

$$b_z = b_z(b_0,\beta_0) = b_0\exp(\sqrt{5/(16\pi)}\beta_0) \tag{17}$$

$$b_\perp = b_\perp(b_0,\beta_0) = b_0\exp(-\sqrt{5/(64\pi)}\beta_0) \tag{18}$$

TABLE A
Parameters of the Effective Interaction NL3 in the RMF Theory Together with the Nuclear Matter Properties Obtained with This Effective Force

Parameters	
$M = 939$ (MeV)	
$m_\sigma = 508.194$ (MeV)	$g_\sigma = 10.217$
$m_\omega = 782.501$ (MeV)	$g_\omega = 12.868$
$m_\rho = 763.000$ (MeV)	$g_\rho = 4.474$
$g_2 = -10.431$ (fm^{-1})	$g_3 = -28.885$
Nuclear matter properties	
ρ_0:	0.1483 fm^{-3}
$(E/A)_\infty$:	16.299 MeV
K:	271.76 MeV
J:	37.4 MeV
m^*/m:	0.60

Note. The various quantities are defined in Ref. [27].

is employed. The basis is defined in terms of the oscillator parameter b_0 and the deformation parameter β_0. The oscillator parameter b_0 is chosen as $b_0 = 41A^{-1/3}$, and the basis deformation β_0 is determined for each nucleus in such a way that the resulting mass quadrupole moment Q of the nucleus is given by $Q = \sqrt{16\pi/5}\ (3/4\pi)AR_0^2\beta_0$ with $R_0 = 1.2A^{1/3}$.

Both proton and neutron pairing correlations have been included using the BCS formalism with constant pairing gaps obtained from the prescription of Ref. [25].

The zero-point energy of the harmonic oscillator has been used for the center-of-mass energy correction. Angular momentum and particle number projection as well as the ground-state correlations induced by the coupling to collective vibrations have been neglected. It is, however, expected that these additional corrections will have only small contributions, and the aim is to describe the ground-state properties of nuclei within the realm of the pure mean field.

The effective force NL3 has been adopted for the calculations using a new version of the “axially deformed” code [26]. The parameter set NL3 has been derived recently [27] by fitting ground-state properties of 10 spherical nuclei. Properties predicted with the NL3 effective interaction are found to be in good agreement with experimental data for nuclei at and away from the line of β stability. In Table A, the parameters of the effective force NL3 are given. In the

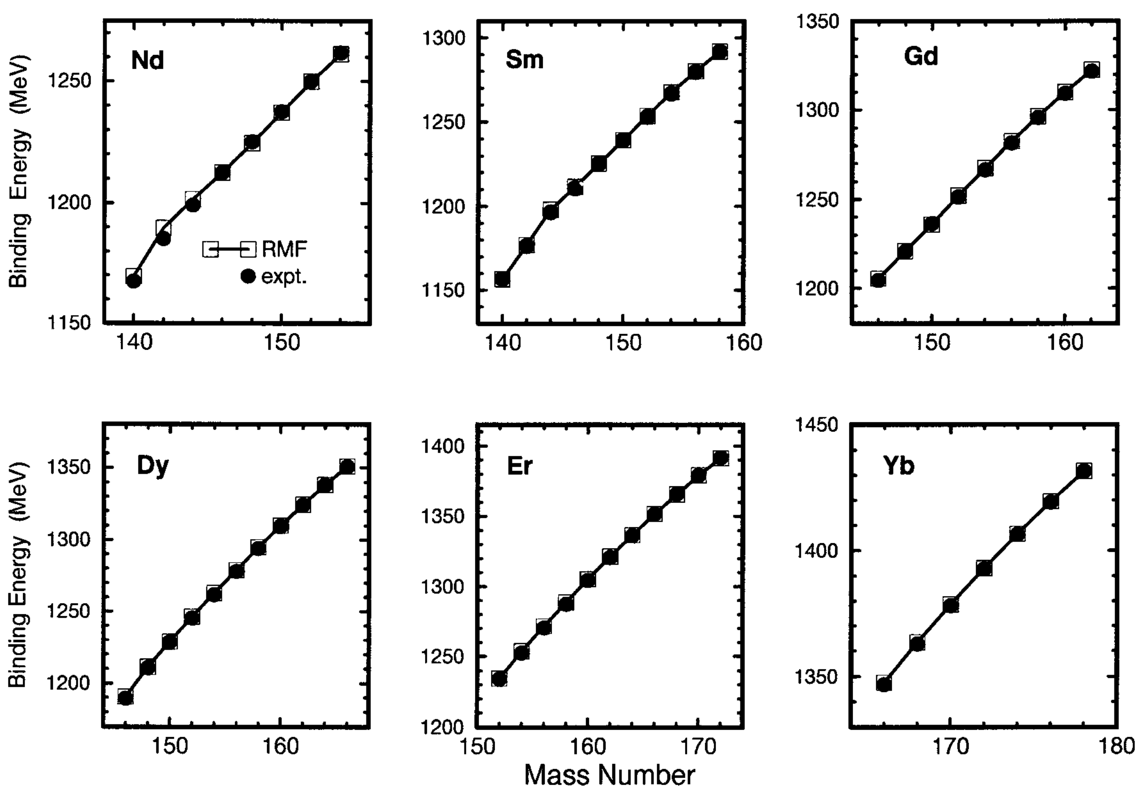

FIG. 1. Total binding energies for various rare-earth nuclei calculated in the RMF theory (open squares) compared with the experimental values (solid circles) from Ref. [29].

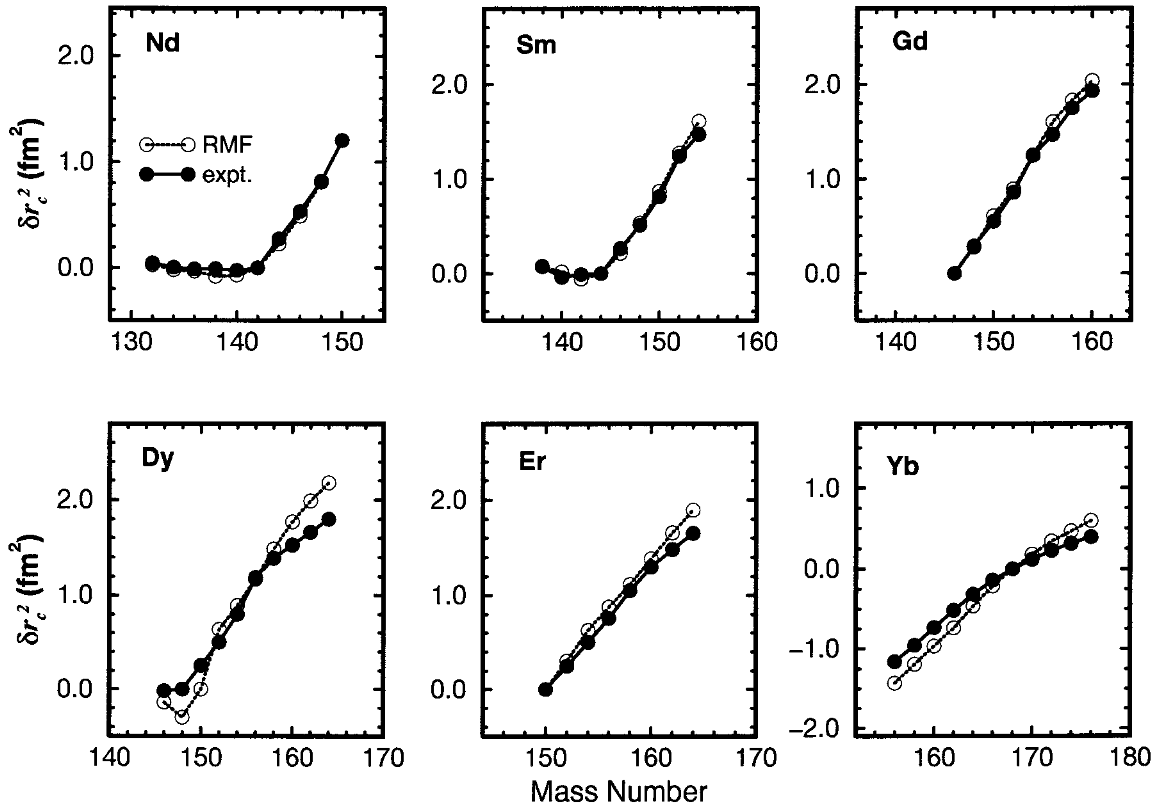

FIG. 2. Isotope shifts for various rare-earth nuclei calculated in the RMF theory (open circles) compared with the experimental values (solid circles) [34]. For Gd, the experimental values are from Ref. [35].

same table, the nuclear matter properties calculated with NL3 are also listed.

The number of oscillator shells taken into account is 12 for fermionic and 20 for bosonic wave functions. However, for very heavy nuclei, contributions from higher oscillator shells may not be negligible. Therefore, a larger number of fermionic shells have been used as necessary, checking each time for the correct convergence.

The charge radius is calculated using the formula

$$r_c = \sqrt{r_p^2 + 0.64} \quad \text{(fm)}. \tag{19}$$

The factor 0.64 in Eq. (19) accounts for the finite-size effects of the proton.

The quadrupole and hexadecapole moments for neutrons (n) and protons (p) are calculated according to the usual definitions

$$Q_{n,p} = \langle 2r^2 P_2(\cos\theta)\rangle_{n,p} = \langle 2z^2 - x^2 - y^2\rangle_{n,p} \tag{20}$$

and

$$H_{n,p} = \langle r^4 Y_{40}(\theta)\rangle_{n,p} = \sqrt{\frac{9}{4\pi}}\frac{1}{8}\langle 8z^4 - 24z^2(x^2+y^2) + 3(x^2+y^2)^2\rangle_{n,p}. \tag{21}$$

The quadrupole deformation parameter β_2 and the hexadecapole deformation parameter β_4 are obtained in such a way that sharp-edged densities with these deformations have the same multipole moments as our self-consistent solutions. This is accomplished by solving a system of two nonlinear equations, as described in Appendix B of Ref. [28].

In Table I the ground-state properties (total binding energies, nuclear radii, quadrupole and hexadecapole moments, and deformation parameters) of 1315 even–even nuclei are listed. The predictions of the RMF theory are in good agreement with experiment. The total binding

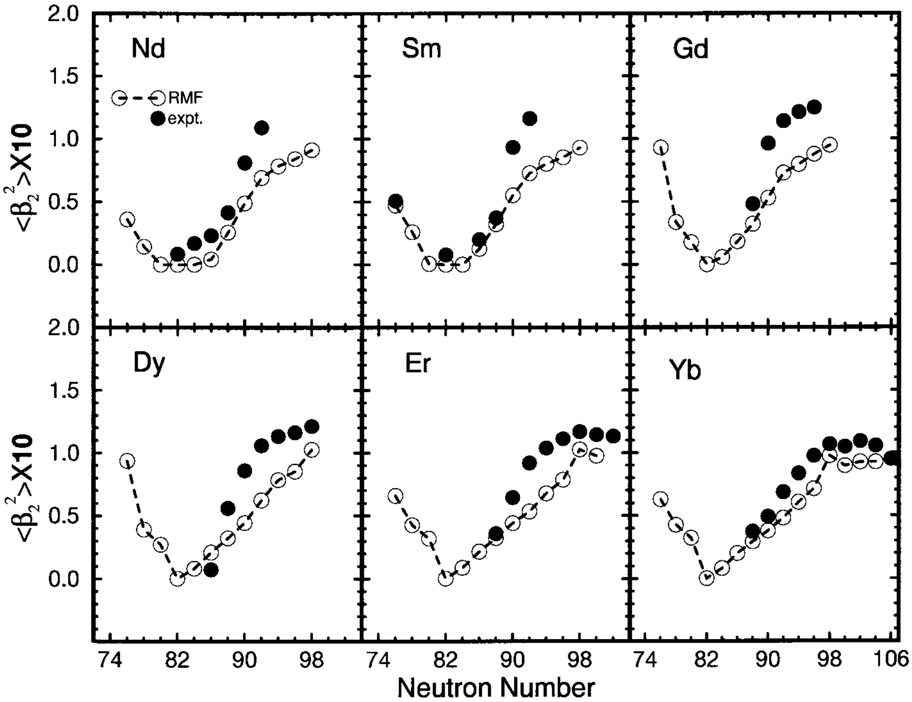

FIG. 3. Quadrupole deformation parameters for various rare-earth nuclei calculated in the RMF theory (open circles) compared with the experimental values (solid circles) [33].

energies are in overall agreement with the empirical data [29], the disagreement amounts to typically 0.5%. (The root-mean-square deviation between calculation and experiment [29] is 2.6 MeV.) Only for some nuclei with $N \sim Z$ does the difference appear to be somewhat larger—about 1–2% for some chains. This discrepancy might indicate that for these nuclei additional correlations should be taken into account. In particular, proton–neutron pairing could have a strong influence on the masses [30]. The nuclear radii and deformation parameters also compare well with the available experimental values [31–33].

As an illustration, the RMF predictions for some rare-earth nuclei with $60 \leq Z \leq 70$ are compared with experiment in Figs. 1–3. The total binding energies are compared in Fig. 1. The isotope shifts δr_c^2 are compared in Fig. 2. These shifts have been obtained with respect to a reference nucleus (ref.) in each chain as given by $\delta r_c^2 = r_c^2 - r_c^2$ (ref.). The reference nucleus has $N = 82$ for all elements except Dy ($Z = 66$), for which the reference nucleus is ^{156}Dy, and Yb ($Z = 70$), for which the reference nucleus is ^{168}Yb. Finally, in Fig. 3, the predictions of the RMF theory for the deformation parameters β_2 are compared with the empirical values. It is seen from all three figures that the agreement with the experiment is good.

The total binding energies for the three most proton-rich isotopes close to the drip line have been compared with the available experimental values in Table I of Ref. [36]. For these nuclei, the root-mean-square deviation between calculation and experiment is slightly larger (3.1 MeV) than the overall deviation (2.6 MeV). Moreover, the calculated binding energies for some light actinide ($Z = 84$–92) isotopes exceed the experimental values by more than 5 MeV. These deviations should be attributed to reflection asymmetric shapes of these nuclei. Reflection asymmetry is not included in the current version of the RMF code.

In several cases two RMF solutions have been found which differ little in energy. As a result of a complex potential-energy landscape in the deformation space, the associated shapes are usually of oblate and prolate types. In Table B, the differences in the binding energy of the prolate and oblate minima are listed for those nuclei for which this difference is less than 1 MeV. A negative value implies that the prolate minimum lies lower than the corresponding oblate minimum. The RMF theory predicts that these nuclei are candidates for studying the phenomenon of shape coexistence.

TABLE B

Energy Difference (in MeV) and Associated Deformations for Nuclei with Possible Shape Coexistence in the Ground State

Nucleus	$E_{pro.} - E_{obl.}$	β_2(pro.)	β_2(obl.)	Nucleus	$E_{pro.} - E_{obl.}$	β_2(pro.)	β_2(obl.)
^{24}Ne	−0.230	0.191	−0.139	^{140}Gd	−0.460	0.305	−0.242
^{38}Ne	−0.700	0.446	−0.380	^{178}Gd	−0.260	0.277	−0.230
^{26}Mg	−0.360	0.296	−0.261	^{180}Gd	0.870	0.211	−0.215
^{28}Mg	−0.990	0.254	−0.161	^{184}Gd	0.840	0.117	−0.148
^{30}Mg	−0.440	0.170	−0.111	^{142}Dy	−0.100	0.306	−0.245
^{24}Si	−0.390	0.230	−0.165	^{144}Dy	0.370	0.108	−0.198
^{26}Si	−0.530	0.320	−0.274	^{144}Er	−0.001	0.257	−0.249
^{30}Si	0.110	0.042	−0.206	^{184}Er	0.400	0.207	−0.229
^{40}Si	0.150	0.301	−0.374	^{186}Er	0.810	0.173	−0.212
^{44}S	−0.470	0.358	−0.294	^{188}Er	0.100	0.142	−0.180
^{48}S	0.290	0.179	−0.250	^{190}Er	0.840	0.106	−0.133
^{50}S	0.200	0.113	−0.242	^{192}Er	0.360	0.041	−0.062
^{64}Zn	−0.100	0.203	−0.227	^{186}Yb	−0.530	0.204	−0.230
^{64}Ge	−0.660	0.217	−0.240	^{188}Yb	−0.080	0.177	−0.214
^{66}Ge	0.250	0.227	−0.261	^{190}Yb	0.200	0.147	−0.183
^{74}Ge	0.580	0.114	−0.210	^{192}Yb	0.510	0.112	−0.133
^{64}Se	−0.140	0.205	−0.230	^{194}Yb	0.460	0.047	−0.070
^{66}Se	0.250	0.230	−0.265	^{192}Hf	−0.740	0.147	−0.174
^{68}Se	0.600	0.242	−0.285	^{194}Hf	0.050	0.110	−0.123
^{76}Kr	−0.150	0.386	−0.209	^{196}W	0.010	0.097	−0.106
^{80}Kr	0.010	0.099	−0.107	^{196}Os	−0.720	0.116	−0.128
^{82}Kr	−0.660	0.119	−0.083	^{190}Pt	−0.720	0.201	−0.182
^{80}Sr	0.050	0.004	−0.213	^{192}Pt	−0.280	0.161	−0.170
^{92}Sr	−0.080	0.132	−0.128	^{194}Pt	−0.200	0.137	−0.157
^{94}Sr	−0.080	0.201	−0.227	^{196}Pt	0.050	0.113	−0.136
^{96}Sr	−0.530	0.384	−0.284	^{198}Pt	0.720	0.068	−0.105
^{98}Sr	−0.070	0.375	−0.341	^{180}Hg	0.120	0.272	−0.184
^{100}Sr	−0.270	0.373	−0.349	^{182}Hg	0.750	0.280	−0.198
^{102}Sr	−0.610	0.373	−0.323	^{184}Hg	0.210	0.285	−0.216
^{104}Sr	−0.390	0.374	−0.299	^{186}Hg	0.350	0.282	−0.222
^{106}Sr	−0.490	0.380	−0.268	^{188}Hg	0.680	0.275	−0.213
^{82}Zr	0.650	0.457	−0.232	^{190}Hg	0.180	0.257	−0.197
^{106}Mo	0.300	0.338	−0.264	^{186}Po	−0.240	0.220	−0.192
^{108}Mo	0.780	0.342	−0.270	^{188}Po	−0.280	0.234	−0.203
^{116}Te	−0.130	0.257	−0.164	^{190}Po	0.200	0.204	−0.207
^{118}Te	0.270	0.276	−0.175	^{192}Po	0.300	0.176	−0.205
^{120}Te	0.360	0.282	−0.179	^{194}Po	0.430	0.163	−0.196
^{122}Te	0.380	0.158	−0.161	^{196}Po	0.910	0.140	−0.186
^{124}Te	0.120	0.137	−0.138	^{198}Rn	−0.970	0.146	−0.194
^{136}Nd	−0.910	0.189	−0.196	^{200}Rn	−0.360	0.118	−0.172
^{174}Nd	0.420	0.230	−0.204	^{202}Rn	−0.470	0.104	−0.109
^{176}Nd	−0.170	0.181	−0.174	^{204}Rn	0.260	0.088	−0.080
^{136}Sm	−0.740	0.263	−0.275	^{252}Rn	0.580	0.194	−0.211
^{138}Sm	−0.060	0.217	−0.232	^{254}Rn	0.910	0.168	−0.201
^{176}Sm	−0.330	0.255	−0.220	^{256}Rn	0.550	0.149	−0.186
^{178}Sm	0.790	0.200	−0.201	^{206}Ra	−0.820	0.087	−0.094
^{180}Sm	0.820	0.136	−0.165	^{258}Rn	0.920	0.127	−0.169
^{182}Sm	0.530	0.094	−0.119	^{208}Ra	−0.440	0.056	−0.075

Note. A negative value for the energy difference implies that the prolate minimum lies lower than the oblate minimum.

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EXPLANATION OF TABLE

TABLE I. RMF Predictions of Ground-State Properties

Z	Atomic number
N	Neutron number
A	Mass number
BE	Total binding energy in MeV
r_n	Root-mean-square neutron radius of the nucleus in fm
r_p	Root-mean-square proton radius of the nucleus in fm
r_c	Root-mean-square charge radius of the nucleus (Eq. (19))
Q_n	Neutron quadrupole moment in b (Eq. (20))
Q_p	Proton quadrupole moment in b (Eq. (20))
H_p	Charge (proton) hexadecapole moment in b^2 (Eq. (21))
β_2	Quadrupole deformation parameter
β_4	Hexadecapole deformation parameter

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
$Z = 10$ (Neon)										
6	16	99.36	2.552	3.132	3.232	0.003	0.015	0.000	0.016	0.002
8	18	134.70	2.585	2.959	3.066	0.000	0.002	0.000	0.001	0.000
10	20	155.51	2.871	2.911	3.020	0.172	0.179	0.003	0.186	0.054
12	22	176.18	3.017	2.892	3.000	0.447	0.342	0.007	0.350	0.070
14	24	190.27	3.092	2.846	2.956	0.265	0.190	0.002	0.191	0.024
16	26	201.90	3.230	2.845	2.955	0.001	0.000	0.000	0.001	0.000
18	28	210.53	3.374	2.884	2.993	0.001	0.001	0.000	0.000	0.000
20	30	217.78	3.428	2.942	3.048	0.000	0.000	0.000	0.000	0.000
22	32	219.22	3.664	2.965	3.071	0.016	0.024	0.000	0.005	0.000
24	34	221.63	3.814	3.024	3.128	1.125	0.342	0.009	0.299	0.125
26	36	222.07	3.948	3.059	3.162	1.469	0.395	0.010	0.363	0.069
28	38	219.88	3.978	3.089	3.191	1.736	0.405	0.006	0.446	−0.113
$Z = 12$ (Magnesium)										
6	18	95.52	2.602	3.360	3.454	0.110	0.417	0.006	0.334	0.051
8	20	136.62	2.591	3.120	3.221	0.000	0.003	0.000	0.002	0.000
10	22	166.97	2.871	3.076	3.179	0.339	0.470	0.008	0.356	0.074
12	24	194.51	2.983	3.021	3.126	0.508	0.522	0.007	0.416	0.004
14	26	213.41	3.064	2.971	3.077	0.409	0.397	0.004	0.296	−0.002
16	28	229.30	3.189	2.977	3.083	0.413	0.348	0.002	0.254	−0.022
18	30	241.57	3.314	2.994	3.099	0.302	0.260	0.001	0.170	−0.012
20	32	252.45	3.358	3.019	3.123	0.000	0.000	0.000	0.000	0.000
22	34	258.20	3.563	3.063	3.166	0.537	0.310	0.004	0.192	0.057
24	36	264.73	3.700	3.125	3.226	1.174	0.537	0.010	0.334	0.073
26	38	268.26	3.827	3.158	3.257	1.459	0.580	0.010	0.381	0.018
28	40	270.11	3.872	3.187	3.286	1.721	0.608	0.005	0.441	−0.102
30	42	271.30	4.053	3.207	3.305	1.766	0.593	0.006	0.403	−0.070
$Z = 14$ (Silicon)										
8	22	136.94	2.603	3.266	3.363	0.000	−0.002	0.000	−0.001	0.000
10	24	170.61	2.844	3.186	3.285	0.223	0.332	0.003	0.230	0.028
12	26	202.85	2.955	3.133	3.234	0.416	0.460	0.004	0.320	−0.007
14	28	232.21	3.036	3.075	3.177	−0.423	−0.434	0.007	−0.328	0.067
16	30	251.56	3.143	3.051	3.154	−0.319	−0.288	0.003	−0.206	0.009
18	32	268.95	3.257	3.069	3.171	−0.266	−0.209	0.001	−0.144	−0.010
20	34	284.60	3.309	3.092	3.194	0.000	0.000	0.000	0.000	0.000
22	36	293.00	3.477	3.109	3.210	0.002	0.000	0.000	0.001	0.000
24	38	301.01	3.603	3.170	3.269	0.871	0.421	0.007	0.241	0.052
26	40	307.66	3.715	3.197	3.295	−0.948	−0.462	0.009	−0.286	0.097
28	42	314.70	3.796	3.251	3.348	−1.422	−0.603	0.015	−0.374	0.173
30	44	318.26	3.942	3.259	3.356	−1.419	−0.551	0.012	−0.353	0.085
32	46	320.53	4.030	3.266	3.363	−1.350	−0.487	0.008	−0.322	0.006
$Z = 16$ (Sulfur)										
10	26	171.17	2.845	3.332	3.427	0.000	0.003	0.000	0.001	0.000
12	28	207.28	2.963	3.270	3.366	0.359	0.442	0.001	0.268	−0.026
14	30	239.98	3.027	3.205	3.304	−0.305	−0.351	0.003	−0.224	0.011

(continued on next page)

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 16$ (Sulfur)										
16	32	266.20	3.139	3.183	3.282	0.333	0.339	−0.001	0.186	−0.036
18	34	287.35	3.249	3.191	3.290	0.156	0.159	0.000	0.079	−0.009
20	36	307.35	3.306	3.211	3.309	0.000	0.000	0.000	0.000	0.000
22	38	319.83	3.454	3.221	3.319	0.142	0.117	0.002	0.054	0.002
24	40	333.09	3.559	3.254	3.351	0.797	0.477	0.003	0.229	0.013
26	42	343.53	3.648	3.273	3.369	0.948	0.517	0.001	0.250	0.026
28	44	351.20	3.752	3.310	3.405	1.555	0.683	0.000	0.358	−0.072
30	46	357.73	3.846	3.320	3.415	1.151	0.683	0.000	0.244	−0.030
32	48	362.97	3.951	3.330	3.425	−1.098	−0.439	0.003	−0.250	−0.023
34	50	367.09	4.047	3.358	3.452	−1.132	−0.433	0.002	−0.242	−0.041
36	52	370.26	4.129	3.373	3.466	−0.796	−0.332	0.000	−0.157	−0.032
38	54	372.65	4.204	3.397	3.490	−0.309	−0.174	0.000	−0.059	−0.009
40	56	374.84	4.278	3.433	3.525	0.003	0.000	0.000	0.000	0.000
$Z = 18$ (Argon)										
12	30	206.76	2.973	3.403	3.496	−0.149	−0.216	0.000	−0.122	−0.009
14	32	244.56	3.047	3.333	3.427	−0.208	−0.271	0.000	−0.145	−0.011
16	34	274.94	3.167	3.316	3.411	−0.286	−0.332	−0.001	−0.176	−0.033
18	36	302.78	3.272	3.318	3.413	−0.381	−0.391	−0.002	−0.207	−0.055
20	38	326.28	3.315	3.315	3.410	−0.002	0.002	0.000	0.000	0.000
22	40	342.72	3.449	3.318	3.413	0.003	0.003	0.000	0.001	0.000
24	42	357.98	3.531	3.328	3.423	0.461	0.281	0.001	0.128	0.004
26	44	372.29	3.605	3.338	3.432	0.580	0.325	0.000	0.146	−0.011
28	46	385.69	3.628	3.336	3.431	−0.499	−0.315	0.001	−0.132	0.002
30	48	394.44	3.795	3.372	3.466	−0.797	−0.412	0.000	−0.191	−0.015
32	50	402.02	3.905	3.405	3.497	−1.027	−0.465	0.000	−0.227	−0.033
34	52	408.73	4.002	3.439	3.531	−1.208	−0.506	−0.001	−0.251	−0.049
36	54	414.01	4.082	3.457	3.548	−0.987	−0.431	−0.002	−0.191	−0.051
38	56	418.20	4.150	3.472	3.563	0.000	0.000	0.000	0.000	0.000
40	58	423.00	4.223	3.507	3.597	0.001	0.000	0.000	0.000	0.000
42	60	423.45	4.317	3.531	3.620	0.004	0.000	0.000	0.000	0.000
$Z = 20$ (Calcium)										
10	30	162.08	2.941	3.560	3.649	0.000	0.000	0.000	0.000	0.000
12	32	204.48	3.016	3.463	3.554	0.000	0.000	0.000	0.000	0.000
14	34	246.29	3.078	3.393	3.487	0.000	0.000	0.000	0.000	0.000
16	36	280.49	3.185	3.375	3.469	0.000	0.000	0.000	0.000	0.000
18	38	312.19	3.279	3.373	3.467	0.000	0.000	0.000	0.000	0.000
20	40	341.91	3.328	3.376	3.469	0.000	0.000	0.000	0.000	0.000
22	42	362.51	3.448	3.377	3.470	0.000	0.000	0.000	0.000	0.000
24	44	380.80	3.519	3.377	3.470	0.000	0.000	0.000	0.000	0.000
26	46	398.71	3.582	3.379	3.472	0.000	0.000	0.000	0.000	0.000
28	48	415.07	3.602	3.378	3.471	0.000	0.000	0.000	0.000	0.000
30	50	426.86	3.761	3.404	3.497	0.000	0.000	0.000	0.000	0.000
32	52	436.40	3.864	3.426	3.518	0.000	0.000	0.000	0.000	0.000
34	54	444.64	3.951	3.452	3.543	0.000	0.000	0.000	0.000	0.000
36	56	452.62	4.033	3.483	3.574	0.000	0.000	0.000	0.000	0.000
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties

See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 20$ (Calcium)										
38	58	460.57	4.105	3.516	3.606	0.000	0.000	0.000	0.000	0.000
40	60	467.68	4.175	3.547	3.636	0.000	0.000	0.000	0.000	0.000
42	62	470.04	4.258	3.569	3.658	0.000	0.000	0.000	0.000	0.000
44	64	470.53	4.332	3.560	3.678	0.006	0.000	0.000	0.001	0.000
$Z = 22$ (Titanium)										
16	38	278.43	3.201	3.553	3.642	−0.003	−0.003	0.000	−0.014	0.000
18	40	314.07	3.289	3.524	3.614	0.003	0.003	0.000	0.001	0.000
20	42	347.89	3.336	3.506	3.596	0.000	0.000	0.000	0.000	0.000
22	44	372.30	3.447	3.497	3.587	0.001	0.001	0.000	0.000	0.000
24	46	395.42	3.521	3.493	3.583	0.480	0.389	0.010	0.124	0.039
26	48	416.21	3.572	3.480	3.571	−0.033	−0.026	0.000	−0.009	0.000
28	50	436.36	3.594	3.471	3.561	0.000	0.000	0.000	0.000	0.000
30	52	449.93	3.737	3.498	3.589	−0.003	−0.001	0.000	−0.001	0.000
32	54	461.49	3.836	3.521	3.610	−0.012	−0.006	0.000	−0.002	0.000
34	56	472.45	3.924	3.552	3.641	0.392	0.187	0.002	0.063	0.001
36	58	482.76	4.002	3.579	3.667	−0.109	−0.052	0.000	−0.017	0.000
38	60	493.17	4.073	3.609	3.609	−0.002	−0.001	0.000	0.000	0.000
40	62	502.63	4.142	3.637	3.723	0.000	0.000	0.000	0.000	0.000
42	64	507.22	4.215	3.659	3.745	0.000	0.000	0.000	0.000	0.000
44	66	510.08	4.279	3.679	3.765	0.000	0.000	0.000	0.000	0.000
46	68	514.41	4.360	3.713	3.798	1.583	0.582	0.022	0.154	0.068
48	70	516.93	4.436	3.734	3.818	1.946	0.632	0.020	0.178	0.051
$Z = 24$ (Chromium)										
18	42	313.62	3.315	3.650	3.737	0.276	0.503	0.006	0.133	0.008
20	44	350.43	3.343	3.607	3.695	0.000	0.000	0.000	0.000	0.000
22	46	378.63	3.455	3.586	3.674	−0.013	−0.015	0.000	−0.004	0.001
24	48	408.92	3.550	3.603	3.690	0.896	0.929	0.032	0.225	0.078
26	50	433.08	3.603	3.584	3.672	0.876	0.832	0.020	0.208	0.036
28	52	453.98	3.587	3.541	3.630	0.000	0.000	0.000	0.000	0.000
30	54	471.34	3.743	3.591	3.679	0.838	0.666	0.015	0.164	0.032
32	56	486.14	3.840	3.623	3.710	1.113	0.790	0.016	0.196	0.017
34	58	499.25	3.921	3.645	3.732	1.130	0.756	0.009	0.189	−0.012
36	60	511.09	3.991	3.661	3.748	0.873	0.595	0.004	0.142	−0.016
38	62	522.52	4.052	3.676	3.762	−0.194	−0.127	0.000	−0.031	−0.001
40	64	534.21	4.120	3.670	3.785	−0.001	−0.001	0.000	0.000	0.000
42	66	541.24	4.190	3.720	3.805	−0.003	0.003	0.000	0.000	0.000
44	68	549.29	4.267	3.762	3.846	1.524	0.863	0.035	0.167	0.082
46	70	555.50	4.339	3.786	3.870	1.959	0.992	0.037	0.192	0.071
48	72	560.05	4.419	3.808	3.892	2.416	1.066	0.035	0.224	0.057
50	74	560.66	4.348	3.799	3.882	−0.004	−0.002	0.000	0.000	0.000
$Z = 26$ (Iron)										
18	44	311.63	3.326	3.719	3.804	−0.382	−0.581	0.005	−0.172	−0.003
20	46	351.33	3.352	3.666	3.752	−0.002	0.021	0.001	0.003	0.001
22	48	383.65	3.453	3.649	3.735	0.250	0.357	0.004	0.084	0.011
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 26$ (Iron)										
24	50	416.17	3.536	3.655	3.742	0.821	0.922	0.018	0.212	0.036
26	52	444.94	3.585	3.634	3.721	0.818	0.840	0.006	0.186	−0.006
28	54	470.06	3.580	3.589	3.677	0.000	0.000	0.000	0.000	0.000
30	56	487.66	3.714	3.628	3.715	0.448	0.389	0.003	0.089	0.005
32	58	507.02	3.814	3.677	3.763	1.132	0.867	0.006	0.199	−0.011
34	60	523.08	3.894	3.704	3.789	1.230	0.886	−0.002	0.206	−0.043
36	62	536.96	3.962	3.717	3.802	0.993	0.723	−0.004	0.159	−0.036
38	64	550.48	4.017	3.725	3.810	−0.049	−0.035	0.000	−0.007	0.000
40	66	564.34	4.084	3.747	3.832	−0.001	−0.002	0.000	0.000	0.000
42	68	573.85	4.145	3.765	3.849	−0.004	−0.004	0.000	−0.001	0.000
44	70	583.32	4.211	3.798	3.881	1.185	0.743	0.018	0.136	0.039
46	72	591.99	4.273	3.823	3.906	1.618	0.930	0.018	0.172	0.029
48	74	598.66	4.332	3.839	3.922	1.717	0.913	0.010	0.174	0.005
50	76	603.30	4.310	3.838	3.920	−0.003	−0.002	0.000	0.000	0.000
52	78	607.30	4.438	3.852	3.934	0.067	0.024	0.000	0.006	0.000
54	80	610.85	4.544	3.885	3.967	2.054	0.772	0.006	0.165	−0.001
56	82	613.45	4.624	3.906	3.987	2.312	0.823	0.004	0.179	−0.022
$Z = 28$ (Nickel)										
18	46	305.37	3.323	3.717	3.802	0.043	0.073	0.000	0.000	0.000
20	48	349.53	3.359	3.693	3.779	0.000	0.000	0.000	0.000	0.000
22	50	385.20	3.449	3.673	3.760	0.000	0.000	0.000	0.000	0.000
24	52	418.66	3.504	3.654	3.741	0.003	0.003	0.000	0.001	0.001
26	54	451.67	3.552	3.639	3.726	0.004	0.002	0.000	0.000	0.000
28	56	482.96	3.573	3.622	3.709	−0.001	−0.001	0.000	0.000	0.000
30	58	503.54	3.692	3.652	3.738	−0.008	−0.006	0.000	−0.001	0.001
32	60	522.41	3.780	3.686	3.772	0.554	0.343	0.004	0.086	0.007
34	62	540.74	3.858	3.714	3.799	0.643	0.374	0.000	0.093	−0.008
36	64	558.56	3.929	3.740	3.824	−0.613	−0.368	0.002	−0.091	−0.002
38	66	575.70	3.991	3.759	3.843	−0.009	−0.006	0.000	0.000	0.000
40	68	591.58	4.056	3.779	3.863	−0.002	−0.002	0.000	0.000	0.000
42	70	603.66	4.113	3.796	3.879	−0.003	−0.002	0.000	0.000	0.000
44	72	614.25	4.164	3.812	3.895	−0.009	−0.006	0.000	−0.001	0.000
46	74	624.55	4.211	3.828	3.910	−0.016	−0.009	0.000	−0.002	0.000
48	76	634.59	4.257	3.844	3.927	−0.006	−0.004	0.000	−0.001	0.000
50	78	643.23	4.274	3.861	3.943	−0.001	−0.001	0.000	0.000	0.000
52	80	648.11	4.394	3.877	3.958	0.002	−0.001	0.000	0.000	0.000
54	82	651.35	4.483	3.891	3.972	0.019	0.028	0.000	0.001	0.000
$Z = 30$ (Zinc)										
24	54	417.94	3.559	3.842	3.924	0.646	0.896	0.020	0.168	0.032
26	56	452.49	3.606	3.810	3.893	0.643	0.825	0.012	0.154	0.011
28	58	484.68	3.606	3.769	3.853	−0.005	0.008	0.001	−0.001	0.001
30	60	510.89	3.742	3.800	3.883	0.913	0.962	0.025	0.170	0.037
32	62	533.63	3.826	3.824	3.906	1.158	1.093	0.020	0.197	0.012
34	64	554.50	3.900	3.845	3.927	1.271	1.108	0.009	0.203	−0.021
36	66	573.55	3.966	3.862	3.944	−1.177	−0.931	0.013	−0.192	0.003
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 30$ (Zinc)										
38	68	592.01	4.016	3.869	3.950	−0.790	−0.614	0.002	−0.121	−0.016
40	70	609.50	4.071	3.879	3.960	−0.003	−0.004	0.000	−0.001	0.000
42	72	624.07	4.127	3.892	3.973	−0.010	−0.009	0.000	−0.001	0.000
44	74	639.12	4.189	3.915	3.996	1.233	0.891	0.027	0.136	0.042
46	76	652.71	4.242	3.932	4.012	1.497	1.010	0.026	0.155	0.030
48	78	663.92	4.281	3.938	4.018	1.184	0.779	0.012	0.120	0.009
50	80	674.21	4.281	3.941	4.021	−0.002	−0.003	0.000	0.000	0.000
52	82	680.24	4.401	3.959	4.039	−0.001	−0.003	0.000	0.000	−0.001
54	84	686.28	4.497	3.998	4.078	2.132	0.947	0.025	0.160	0.035
56	86	691.39	4.576	4.028	4.107	2.685	1.135	0.025	0.194	0.010
58	88	695.70	4.649	4.053	4.131	2.913	1.209	0.021	0.205	−0.012
60	90	699.33	4.716	4.072	4.150	2.844	1.187	0.016	0.197	−0.027
62	92	702.69	4.777	4.088	4.165	2.537	1.087	0.011	0.172	−0.033
64	94	705.85	4.835	4.101	4.178	1.954	0.909	0.006	0.134	−0.026
$Z = 32$ (Germanium)										
28	60	483.92	3.639	3.859	3.941	−0.256	−0.247	0.005	−0.069	0.009
30	62	514.11	3.764	3.888	3.970	1.035	1.215	0.016	0.197	0.011
32	64	540.19	3.843	3.904	3.985	1.245	1.309	0.006	0.217	−0.019
34	66	564.71	3.923	3.931	4.011	−1.445	−1.360	0.023	−0.261	0.012
36	68	586.12	3.987	3.943	4.024	−1.563	−1.372	0.022	−0.262	0.006
38	70	606.10	4.035	3.948	4.028	−1.335	−1.162	0.012	−0.212	−0.015
40	72	625.35	4.091	3.961	4.041	−1.447	−1.181	0.011	−0.214	−0.020
42	74	642.71	4.143	3.971	4.051	−1.518	−1.183	0.010	−0.210	−0.020
44	76	659.86	4.188	3.978	4.057	1.402	1.114	0.018	0.157	0.019
46	78	676.18	4.235	3.990	4.069	1.535	1.155	0.012	0.163	0.004
48	80	690.35	4.276	3.997	4.076	1.357	1.001	0.001	0.141	−0.013
50	82	702.62	4.281	3.993	4.073	−0.003	−0.004	0.000	0.000	−0.001
52	84	710.31	4.390	4.022	4.101	1.158	0.698	0.008	0.101	0.013
54	86	717.91	4.476	4.060	4.138	2.335	1.184	0.017	0.179	0.016
56	88	724.79	4.550	4.090	4.168	2.869	1.358	0.012	0.210	−0.011
58	90	730.63	4.620	4.115	4.192	3.093	1.421	0.001	0.220	−0.034
60	92	735.69	4.681	4.138	4.214	3.110	1.418	−0.003	0.218	−0.054
62	94	740.39	4.740	4.158	4.235	3.006	1.380	−0.010	0.205	−0.068
64	96	744.52	4.796	4.174	4.250	2.658	1.278	−0.012	0.178	−0.063
66	98	748.39	4.849	4.185	4.260	1.941	1.049	−0.010	0.131	−0.041
68	100	752.69	4.893	4.200	4.276	−1.012	−0.526	−0.002	−0.068	−0.017
$Z = 34$ (Selenium)										
28	62	482.47	3.682	3.959	4.039	−0.574	−0.959	0.015	−0.150	0.021
30	64	514.40	3.791	3.976	4.056	1.063	1.344	−0.003	0.205	−0.020
32	66	544.10	3.875	3.997	4.076	−1.311	−1.529	0.026	−0.265	0.012
34	68	572.28	3.943	4.010	4.089	−1.550	−1.625	0.027	−0.285	0.008
36	70	596.28	4.011	4.023	4.101	−1.187	−1.731	0.031	−0.306	0.009
38	72	618.09	4.062	4.028	4.107	−1.800	−1.646	0.026	−0.282	−0.003
40	74	639.35	4.105	4.031	4.109	−1.625	−1.450	0.016	−0.242	−0.021
42	76	659.10	4.156	4.040	4.119	−1.749	−1.468	0.014	−0.244	−0.028
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 34$ (Selenium)										
44	78	677.26	4.193	4.039	4.117	1.391	1.194	0.000	0.159	−0.008
46	80	695.88	4.238	4.048	4.127	1.500	1.224	−0.005	0.162	−0.019
48	82	712.40	4.276	4.053	4.131	1.267	1.016	−0.011	0.133	−0.027
50	84	728.29	4.285	4.047	4.125	0.003	0.002	−0.001	0.000	−0.001
52	86	736.77	4.382	4.070	4.148	0.043	0.025	−0.001	0.004	−0.001
54	88	745.32	4.467	4.113	4.190	2.237	1.223	0.006	0.171	0.003
56	90	754.27	4.540	4.147	4.223	2.923	1.523	−0.004	0.216	−0.029
58	92	761.99	4.606	4.173	4.249	3.168	1.603	−0.015	0.228	−0.054
60	94	768.84	4.666	4.198	4.272	3.228	1.612	−0.026	0.227	−0.078
62	96	775.14	4.724	4.219	4.294	3.227	1.600	−0.035	0.222	−0.094
64	98	780.35	4.779	4.235	4.310	3.061	1.544	−0.035	0.204	−0.089
66	100	784.93	4.829	4.242	4.317	2.336	1.283	−0.028	0.154	−0.062
68	102	791.44	4.885	4.285	4.359	−3.773	−1.727	0.027	−0.259	−0.037
70	104	796.67	4.919	4.270	4.345	0.001	0.001	0.000	0.000	0.000
72	106	800.19	4.962	4.291	4.364	0.003	0.003	0.000	0.000	0.000
74	108	802.91	5.003	4.314	4.387	−0.936	−0.562	0.007	−0.056	0.002
76	110	805.80	5.047	4.339	4.413	2.138	1.028	0.011	0.109	0.013
$Z = 36$ (Krypton)										
32	68	544.35	3.896	4.075	4.152	−1.357	−1.700	0.026	−0.274	0.005
34	70	575.14	3.964	4.087	4.165	−1.667	−1.919	0.036	−0.310	0.009
36	72	602.92	4.036	4.103	4.180	−2.102	−2.191	0.049	−0.358	0.018
38	74	627.29	4.119	4.137	4.213	3.222	3.094	0.093	0.387	0.010
40	76	649.91	4.170	4.142	4.218	3.390	3.665	0.078	0.386	0.000
42	78	671.75	4.163	4.098	4.176	−1.729	−1.534	0.008	−0.239	−0.036
44	80	691.73	4.193	4.089	4.166	−0.847	−0.801	0.000	−0.107	−0.008
46	82	712.35	4.236	4.096	4.173	1.127	0.940	−0.007	0.119	−0.016
48	84	731.49	4.271	4.098	4.175	0.718	0.596	−0.006	0.074	−0.012
50	86	749.50	4.289	4.098	4.175	0.010	0.009	−0.001	0.001	−0.001
52	88	759.75	4.380	4.121	4.198	0.088	0.061	−0.001	0.008	−0.001
54	90	769.85	4.458	4.157	4.233	1.893	1.050	0.005	0.141	0.007
56	92	780.03	4.529	4.193	4.268	2.722	1.475	0.000	0.196	−0.018
58	94	789.19	4.592	4.220	4.295	3.048	1.620	−0.011	0.214	−0.043
60	96	797.52	4.650	4.243	4.317	3.084	1.595	−0.025	0.211	−0.067
62	98	805.23	4.707	4.263	4.338	3.059	1.553	−0.035	0.204	−0.083
64	100	811.93	4.759	4.276	4.350	2.734	1.389	−0.036	0.177	−0.077
66	102	819.44	4.847	4.364	4.436	6.189	3.133	0.090	0.346	−0.004
68	104	825.42	4.899	4.385	4.457	6.453	3.170	0.080	0.350	−0.016
70	106	830.26	4.947	4.397	4.469	6.412	3.108	0.071	0.336	−0.014
72	108	838.06	4.941	4.331	4.405	0.007	0.005	0.000	0.000	0.000
74	110	842.11	4.980	4.353	4.426	−0.771	−0.462	0.001	−0.045	0.001
76	112	846.11	5.017	4.375	4.447	−1.138	−0.671	0.000	−0.065	−0.002
78	114	849.60	5.052	4.394	4.466	−0.977	−0.551	−0.001	−0.054	−0.004
80	116	852.89	5.085	4.412	4.484	−0.009	−0.020	0.000	−0.001	0.000
82	118	855.31	5.097	4.438	4.510	0.002	0.002	0.000	0.000	0.000
84	120	855.91	5.183	4.445	4.517	0.050	0.013	0.000	0.002	0.000

TABLE I. RMF Predictions of Ground-State Properties

See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
$Z = 38$ (Strontium)										
34	72	572.98	3.973	4.149	4.225	1.691	2.110	−0.001	0.269	−0.052
36	74	605.02	4.077	4.195	4.271	2.951	3.363	0.099	0.387	0.019
38	76	634.86	4.139	4.207	4.283	3.412	3.557	0.104	0.410	0.012
40	78	660.08	4.192	4.213	4.288	3.675	3.587	0.088	0.417	−0.012
42	80	682.19	4.167	4.149	4.225	−1.581	−1.444	−0.007	−0.213	−0.049
44	82	704.77	4.196	4.141	4.218	−0.508	−0.486	−0.003	−0.020	−0.004
46	84	726.60	4.236	4.143	4.220	0.569	0.458	−0.002	0.057	−0.005
48	86	747.96	4.273	4.145	4.222	0.176	0.150	0.000	0.017	0.000
50	88	767.87	4.293	4.143	4.219	0.013	0.013	−0.001	0.000	0.000
52	90	779.98	4.380	4.169	4.245	0.070	0.051	−0.001	0.006	−0.001
54	92	791.20	4.453	4.204	4.280	1.802	1.066	0.015	0.132	0.017
56	94	803.21	4.522	4.246	4.320	2.833	1.722	0.024	0.201	0.002
58	96	815.31	4.655	4.361	4.434	6.073	3.843	0.154	0.384	0.044
60	98	826.28	4.698	4.374	4.447	6.282	3.824	0.165	0.375	0.054
62	100	835.71	4.746	4.390	4.462	6.450	3.804	0.158	0.373	0.043
64	102	844.24	4.795	4.407	4.479	6.580	3.774	0.140	0.373	0.021
66	104	852.43	4.843	4.426	4.498	6.743	3.759	0.121	0.380	−0.002
68	106	860.02	4.894	4.447	4.519	7.073	3.809	0.109	0.393	−0.016
70	108	866.24	4.957	4.473	4.544	7.738	3.957	0.116	0.393	−0.012
72	110	871.47	5.013	4.493	4.563	8.152	4.026	0.120	0.394	−0.006
74	112	878.67	4.959	4.387	4.459	0.052	0.032	0.000	0.003	0.000
76	114	884.10	4.997	4.409	4.481	−1.095	−0.671	−0.005	−0.062	−0.007
78	116	888.76	5.029	4.425	4.497	−0.908	−0.478	−0.004	−0.047	−0.005
80	118	893.33	5.061	4.442	4.513	−0.080	0.007	−0.001	−0.002	−0.001
82	120	896.94	5.077	4.465	4.536	−0.001	0.001	0.000	0.000	0.000
$Z = 40$ (Zirconium)										
36	76	604.70	4.091	4.259	4.334	2.969	3.573	0.087	0.391	0.000
38	78	637.10	4.154	4.272	4.347	3.480	3.872	0.093	0.422	−0.010
40	80	665.52	4.207	4.276	4.350	3.804	3.959	0.073	0.437	−0.037
42	82	690.59	4.177	4.205	4.280	−1.707	−1.669	−0.010	−0.232	−0.057
44	84	715.00	4.219	4.206	4.282	−1.752	−1.652	−0.011	−0.224	0.057
46	86	738.25	4.241	4.193	4.268	0.021	0.017	−0.001	0.002	−0.001
48	88	761.65	4.277	4.195	4.270	0.016	0.014	−0.001	0.002	−0.001
50	90	783.41	4.298	4.194	4.269	0.011	0.010	−0.001	0.001	−0.001
52	92	797.32	4.381	4.216	4.291	0.027	0.020	−0.001	0.002	−0.001
54	94	810.62	4.454	4.263	4.337	2.255	1.606	0.051	0.166	0.037
56	96	824.61	4.522	4.302	4.376	3.151	2.195	0.054	0.223	0.016
58	98	837.36	4.594	4.347	4.420	4.331	2.916	0.096	0.282	0.031
60	100	850.17	4.681	4.409	4.481	6.010	3.882	0.155	0.359	0.047
62	102	861.20	4.734	4.430	4.502	6.358	3.979	0.151	0.367	0.034
64	104	871.34	4.782	4.450	4.521	6.553	3.994	0.132	0.371	0.011
66	106	881.18	4.829	4.469	4.540	6.743	4.000	0.111	0.375	−0.012
68	108	890.37	4.879	4.491	4.561	7.044	4.056	0.096	0.381	−0.030
70	110	897.99	4.942	4.520	4.590	7.815	4.281	0.101	0.401	−0.031
72	112	904.76	5.006	4.551	4.620	8.655	4.523	0.111	0.421	−0.029
74	114	912.79	4.949	4.454	4.525	−2.973	−1.668	−0.019	−0.182	−0.063
76	116	919.05	4.977	4.441	4.513	−0.220	−0.136	0.000	−0.012	0.000

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 40$ (Zirconium)										
78	118	925.35	5.010	4.458	4.529	0.005	0.003	0.000	0.000	0.000
80	120	931.48	5.044	4.476	4.547	−0.001	0.001	0.000	0.000	0.000
82	122	936.30	5.060	4.495	4.566	−0.003	0.000	0.000	0.000	0.000
84	124	938.54	5.138	4.506	4.576	0.007	0.000	0.000	0.002	0.000
86	126	939.19	5.198	4.517	4.587	0.157	0.035	0.000	0.006	0.001
88	128	939.86	5.260	4.529	4.599	1.592	0.380	0.005	0.017	0.012
$Z = 42$ (Molybdenum)										
38	80	635.44	4.168	4.334	4.407	3.452	4.019	0.096	0.124	0.099
40	82	666.70	4.140	4.256	4.331	−1.588	−1.765	−0.014	−0.230	−0.059
42	84	696.05	4.187	4.258	4.333	−1.796	−1.866	−0.018	−0.247	−0.071
44	86	720.93	4.208	4.241	4.316	0.039	0.027	−0.001	0.003	−0.001
46	88	747.07	4.246	4.242	4.316	0.489	0.422	0.004	0.015	0.004
48	90	772.44	4.280	4.241	4.315	0.003	0.003	−0.001	0.003	−0.002
50	92	796.32	4.302	4.239	4.314	0.013	0.013	−0.001	0.000	−0.002
52	94	811.89	4.380	4.261	4.336	0.035	0.028	−0.002	0.003	−0.002
54	96	827.85	4.453	4.308	4.381	2.292	1.755	0.064	0.167	0.043
56	98	843.97	4.509	4.328	4.401	2.673	1.869	0.041	0.185	0.014
58	100	857.39	4.581	4.375	4.448	3.851	2.698	0.069	0.253	0.015
60	102	871.42	4.658	4.425	4.497	5.334	3.544	0.137	0.316	0.046
62	104	884.00	4.715	4.455	4.526	5.905	3.810	0.143	0.336	0.036
64	106	895.89	4.733	4.424	4.496	−3.736	−2.244	0.011	−0.264	−0.031
66	108	907.81	4.779	4.444	4.515	−3.942	−2.295	0.008	−0.270	−0.044
68	110	918.53	4.823	4.464	4.535	−4.137	−2.350	0.003	−0.278	−0.057
70	112	927.83	4.864	4.478	4.549	−4.032	−2.284	−0.006	−0.264	−0.067
72	114	936.67	4.900	4.487	4.557	−3.576	−2.085	−0.019	−0.229	−0.076
74	116	945.17	4.937	4.499	4.569	−3.336	−1.967	−0.028	−0.208	−0.081
76	118	952.50	4.972	4.510	4.581	−3.086	−1.846	−0.029	−0.184	−0.071
78	120	959.45	4.995	4.496	4.567	0.874	0.503	0.005	0.043	0.002
80	122	966.96	5.026	4.510	4.581	−0.002	0.001	0.000	0.000	0.000
82	124	973.27	5.044	4.527	4.597	−0.004	−0,001	0.000	0.000	0.000
84	126	976.21	5.118	4.540	4.610	0.001	−0.001	0.000	0.000	0.001
86	128	977.49	5.177	4.552	4.622	0.136	0.004	0.001	0.005	0.001
$Z = 44$ (Ruthenium)										
40	84	666.35	4.149	4.307	4.381	−1.563	−1.792	−0.017	−0.220	−0.057
42	86	698.08	4.195	4.308	4.381	−1.802	−1.953	−0.024	−0.244	−0.076
44	88	726.42	4.221	4.296	4.370	1.073	1.110	0.043	0.107	0.035
46	90	755.03	4.257	4.294	4.368	1.190	1.172	0.031	0.113	0.020
48	92	781.63	4.285	4.286	4.360	0.630	0.637	0.004	0.061	−0.001
50	94	807.34	4.304	4.280	4.354	0.017	0.019	−0.002	0.002	−0.002
52	96	824.54	4.379	4.303	4.377	0.107	0.099	−0.002	0.009	−0.002
54	98	842.73	4.452	4.346	4.419	2.149	1.697	0.061	0.154	0.040
56	100	859.66	4.513	4.376	4.449	2.847	2.114	0.051	0.194	0.018
58	102	874.96	4.570	4.401	4.474	3.293	2.340	0.043	0.215	0.003
60	104	889.55	4.640	4.444	4.515	4.652	3.152	0.109	0.275	0.036
62	106	904.05	4.719	4.503	4.573	6.038	4.129	0.171	0.338	0.043
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 44$ (Ruthenium)										
64	108	917.77	4.726	4.466	4.537	−3.812	−2.422	0.014	−0.265	−0.027
66	110	931.28	4.770	4.484	4.555	−3.991	−2.454	0.007	−0.271	−0.043
68	112	943.69	4.814	4.503	4.573	−4.186	−2.501	−0.001	−0.278	−0.058
70	114	954.56	4.853	4.517	4.588	−4.166	−2.458	−0.012	−0.270	−0.071
72	116	964.66	4.888	4.526	4.596	−3.730	−2.245	−0.028	−0.237	−0.082
74	118	974.62	4.923	4.536	4.606	−3.376	−2.062	−0.041	−0.209	−0.089
76	120	983.51	4.957	4.547	4.617	−3.166	−1.932	−0.044	−0.188	−0.083
78	122	992.43	4.984	4.537	4.607	1.776	1.149	0.019	0.086	0.006
80	124	1000.64	5.010	4.545	4.615	1.117	1.102	0.001	0.001	0.001
82	126	1008.52	5.029	4.560	4.630	−0.004	−0.005	0.001	0.000	0.001
84	128	1012.12	5.100	4.574	4.643	−0.005	−0.003	0.001	0.002	0.001
86	130	1014.01	5.158	4.587	4.656	0.519	0.196	0.003	0.019	0.003
88	132	1017.67	5.224	4.623	4.692	4.040	1.573	0.072	0.136	0.049
90	134	1020.42	5.280	4.651	4.719	5.129	1.957	0.077	0.168	0.037
92	136	1022.68	5.332	4.674	4.742	5.757	2.159	0.067	0.187	0.015
94	138	1024.67	5.381	4.695	4.763	6.151	2.268	0.051	0.198	−0.008
96	140	1026.30	5.428	4.713	4.780	6.295	2.293	0.034	0.200	−0.027
$Z = 46$ (Palladium)										
42	88	696.64	4.180	4.336	4.410	0.049	0.060	−0.001	0.006	−0.001
44	90	729.27	4.226	4.339	4.412	1.097	1.187	0.029	0.109	0.020
46	92	760.26	4.261	4.336	4.410	1.181	1.213	0.016	0.112	0.006
48	94	789.17	4.289	4.328	4.401	0.753	0.782	−0.004	0.071	−0.008
50	96	816.86	4.306	4.319	4.393	0.018	0.021	−0.002	0.002	−0.002
52	98	835.78	4.378	4.342	4.415	0.113	0.107	−0.003	0.010	−0.003
54	100	855.33	4.449	4.381	4.454	1.916	1.540	0.045	0.136	0.029
56	102	873.62	4.509	4.409	4.481	2.538	1.887	0.038	0.170	0.014
58	104	890.47	4.563	4.430	4.502	2.842	2.011	0.021	0.183	−0.005
60	106	906.36	4.612	4.449	4.520	2.957	2.017	−0.002	0.185	−0.028
62	108	921.39	4.662	4.469	4.540	3.230	2.130	−0.009	0.195	−0.037
64	110	936.02	4.722	4.504	4.575	4.539	2.892	0.051	0.250	−0.007
66	112	951.86	4.762	4.521	4.591	−3.980	−2.556	0.016	−0.263	−0.031
68	114	965.79	4.805	4.539	4.609	−4.181	−2.605	0.006	−0.270	−0.047
70	116	978.16	4.844	4.553	4.622	−4.200	−2.565	−0.006	−0.265	−0.061
72	118	989.56	4.876	4.558	4.628	−3.673	−2.253	−0.027	−0.225	−0.072
74	120	1000.98	4.907	4.563	4.633	−3.072	−1.869	−0.043	−0.180	−0.075
76	122	1012.40	4.938	4.558	4.627	2.006	1.343	0.024	0.098	0.009
78	124	1022.14	4.964	4.564	4.633	−0.550	−0.037	−0.001	−0.028	−0.002
80	126	1032.98	4.995	4.577	4.646	0.009	0.010	0.001	0.001	0.001
82	128	1042.43	5.015	4.591	4.660	−0.004	−0.003	0.001	0.000	0.001
84	130	1046.71	5.084	4.606	4.675	−0.009	−0.004	0.001	0.000	0.001
86	132	1049.16	5.140	4.620	4.689	0.194	0.069	0.001	0.000	0.001
88	134	1053.55	5.204	4.654	4.722	3.825	1.541	0.060	0.128	0.043
90	136	1057.14	5.259	4.680	4.748	4.889	1.913	0.065	0.159	0.033
92	138	1060.22	5.310	4.703	4.771	5.503	2.104	0.054	0.176	0.013
94	140	1063.05	5.358	4.724	4.791	5.891	2.209	0.037	0.187	−0.010
96	142	1065.54	5.404	4.742	4.809	6.061	2.243	0.018	0.190	−0.029
98	144	1067.65	5.448	4.758	4.825	5.950	2.189	0.000	0.185	−0.043
100	146	1069.56	5.490	4.772	4.838	5.598	2.055	−0.017	0.172	−0.055

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
$Z = 48$ (Cadmium)										
44	92	729.22	4.226	4.375	4.448	0.524	0.556	0.001	0.052	0.000
46	94	762.49	4.261	4.371	4.444	0.762	0.764	−0.005	0.071	−0.007
48	96	794.21	4.289	4.363	4.436	0.034	0.035	−0.003	0.003	−0.002
50	98	824.87	4.310	4.357	4.430	0.001	0.002	0.003	0.001	−0.002
52	100	845.60	4.379	4.379	4.452	0.042	0.038	−0.003	0.003	−0.003
54	102	865.28	4.441	4.410	4.482	1.303	1.018	0.019	0.091	0.014
56	104	884.94	4.501	4.378	4.509	2.059	1.504	0.018	0.135	0.006
58	106	903.60	4.555	4.460	4.531	2.408	1.680	−0.001	0.152	−0.013
60	108	921.35	4.605	4.479	4.550	2.552	1.720	−0.023	0.157	−0.034
62	110	937.95	4.653	4.496	4.567	2.647	1.733	−0.035	0.157	−0.045
64	112	953.43	4.708	4.531	4.601	−3.478	−2.320	0.039	−0.221	0.006
66	114	969.85	4.755	4.553	4.623	−3.836	−2.527	0.032	−0.242	−0.012
68	116	985.25	4.799	4.573	4.643	−4.138	−2.675	0.021	−0.258	−0.031
70	118	999.09	4.837	4.587	4.656	−4.201	−2.652	0.009	−0.255	−0.043
72	120	1012.07	4.851	4.556	4.626	0.828	0.559	0.001	0.043	0.000
74	122	1025.86	4.887	4.572	4.641	1.469	0.961	0.007	0.072	0.002
76	124	1039.16	4.922	4.585	4.654	1.453	0.950	0.001	0.070	−0.002
78	126	1051.34	4.950	4.594	4.663	0.117	0.008	0.001	0.006	0.001
80	128	1063.95	4.981	4.607	4.676	−0.001	0.002	0.001	0.000	0.001
82	130	1074.97	5.003	4.620	4.689	−0.005	0.007	0.001	0.000	0.001
84	132	1079.97	5.069	4.637	4.705	−0.010	−0.004	0.001	0.000	0.001
86	134	1083.07	5.124	4.652	4.720	−0.008	−0.006	0.001	0.000	0.001
88	136	1086.95	5.183	4.677	4.745	2.878	1.069	0.040	0.030	0.043
90	138	1091.28	5.238	4.706	4.774	4.351	1.637	0.050	0.138	0.030
92	140	1095.20	5.289	4.731	4.798	5.102	1.917	0.037	0.160	0.010
94	142	1098.91	5.337	4.753	4.820	5.566	2.076	0.016	0.173	−0.013
96	144	1102.32	5.383	4.772	4.839	5.773	2.135	−0.005	0.178	−0.032
98	146	1105.36	5.426	4.789	4.856	5.700	2.094	−0.026	0.174	−0.048
100	148	1108.22	5.467	4.805	4.871	5.424	1.985	−0.046	0.164	−0.062
102	150	1110.96	5.507	4.818	4.884	4.986	1.832	−0.060	0.149	−0.068
104	152	1113.44	5.545	4.828	4.894	4.225	1.582	−0.059	0.124	−0.061
106	154	1116.11	5.582	4.837	4.903	−3.606	−1.097	−0.023	−0.105	−0.038
$Z = 50$ (Tin)										
44	94	727.36	4.228	4.406	4.478	0.018	0.017	−0.002	0.002	−0.002
46	96	762.45	4.261	4.399	4.472	0.021	0.019	−0.002	0.002	−0.002
48	98	797.11	4.291	4.394	4.467	0.015	0.015	−0.002	0.001	−0.002
50	100	829.94	4.312	4.388	4.460	0.012	0.012	−0.003	0.001	−0.002
52	102	852.56	4.378	4.411	4.482	0.025	0.021	−0.003	0.002	−0.003
54	104	873.12	4.433	4.433	4.504	0.080	0.056	−0.004	0.005	−0.003
56	106	893.51	4.484	4.455	4.527	0.301	0.199	−0.003	0.019	−0.002
58	108	913.49	4.533	4.476	4.547	0.281	0.173	−0.003	0.017	−0.002
60	110	932.79	4.580	4.494	4.565	0.225	0.131	−0.002	0.013	−0.002
62	112	951.44	4.627	4.510	4.580	0.182	0.102	−0.001	0.010	−0.001
64	114	969.42	4.672	4.525	4.595	0.091	0.052	−0.001	0.005	0.000
66	116	986.44	4.716	4.539	4.609	0.057	0.034	0.000	0.003	0.000
68	118	1002.63	4.759	4.553	4.623	0.045	0.027	0.000	0.002	0.000

(continued on next page)

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 50$ (Tin)										
70	120	1018.32	4.800	4.567	4.636	0.036	0.023	0.000	0.002	0.000
72	122	1033.60	4.838	4.579	4.649	0.039	0.025	0.000	0.002	0.000
74	124	1048.58	4.872	4.592	4.661	0.041	0.026	0.001	0.002	0.001
76	126	1063.35	4.905	4.604	4.673	0.021	0.015	0.001	0.001	0.001
78	128	1077.92	4.936	4.617	4.685	0.003	0.004	0.001	0.000	0.001
80	130	1092.17	4.967	4.629	4.698	−0.004	0.000	0.001	0.000	0.001
82	132	1104.72	4.989	4.641	4.710	−0.006	−0.001	0.001	0.000	0.000
84	134	1110.52	5.053	4.659	4.726	0.004	−0.002	0.000	0.000	0.000
86	136	1114.31	5.107	4.675	4.743	−0.020	−0.006	0.001	−0.001	0.001
88	138	1117.95	5.158	4.692	4.759	−0.007	−0.006	0.002	0.000	0.002
90	140	1122.27	5.211	4.715	4.783	2.556	0.737	0.037	0.075	0.031
92	142	1126.75	5.260	4.738	4.805	3.554	1.022	0.038	0.102	0.024
94	144	1130.96	5.307	4.758	4.825	4.008	1.138	0.024	0.114	0.008
96	146	1135.04	5.386	4.839	4.905	8.296	3.691	0.159	0.243	0.031
98	148	1139.54	5.432	4.863	4.929	9.207	3.948	0.178	0.259	0.032
100	150	1143.54	5.474	4.883	4.948	9.748	4.087	0.180	0.268	0.026
102	152	1147.01	5.514	4.901	4.966	9.999	4.141	0.171	0.270	0.017
104	154	1150.14	5.552	4.917	4.981	10.006	4.124	0.154	0.267	0.005
106	156	1153.15	5.588	4.931	4.996	9.853	4.067	0.134	0.261	−0.006
$Z = 52$ (Tellurium)										
54	106	874.22	4.469	4.514	4.585	1.768	1.659	0.096	0.120	0.051
56	108	896.94	4.523	4.535	4.605	2.222	1.919	0.086	0.142	0.040
58	110	918.42	4.573	4.553	4.623	2.529	2.044	0.072	0.153	0.026
60	112	938.88	4.621	4.570	4.640	2.842	2.183	0.069	0.164	0.019
62	114	959.06	4.688	4.607	4.676	4.374	3.256	0.135	0.232	0.039
64	116	978.53	4.740	4.632	4.701	4.972	3.644	0.127	0.257	0.023
66	118	997.60	4.750	4.618	4.687	−3.101	−2.067	0.060	−0.175	0.024
68	120	1015.64	4.789	4.631	4.700	−3.275	−2.120	0.050	−0.179	0.013
70	122	1032.53	4.823	4.640	4.708	−3.028	−1.918	0.032	−0.161	0.001
72	124	1049.16	4.856	4.648	4.717	−2.670	−1.679	0.013	−0.138	−0.013
74	126	1066.98	4.878	4.648	4.716	−0.218	0.101	0.015	−0.003	0.012
76	128	1080.75	4.916	4.664	4.732	−1.603	−1.014	−0.001	−0.002	−0.005
78	130	1096.43	4.946	4.671	4.739	0.696	0.477	0.003	0.032	0.006
80	132	1112.22	4.976	4.683	4.750	−0.006	−0.001	0.002	0.000	0.001
82	134	1126.43	4.998	4.693	4.761	−0.009	−0.004	0.002	0.000	0.001
84	136	1133.27	5.059	4.713	4.780	−0.002	−0.001	0.002	−0.001	0.001
86	138	1138.00	5.110	4.731	4.798	−0.008	−0.004	0.003	−0.003	0.002
88	140	1145.60	5.170	4.768	4.834	3.789	1.770	0.126	0.121	0.064
90	142	1151.70	5.221	4.792	4.858	4.734	2.135	0.135	0.146	0.058
92	144	1157.12	5.269	4.814	4.880	5.380	2.362	0.122	0.163	0.041
94	146	1162.29	5.316	4.837	4.902	5.999	2.592	0.106	0.179	0.023
96	148	1167.33	5.366	4.867	4.932	7.223	3.158	0.129	0.210	0.022
98	150	1172.80	5.421	4.908	4.973	9.149	4.066	0.180	0.255	0.031
100	152	1177.90	5.469	4.937	5.001	10.121	4.500	0.183	0.277	0.022
102	154	1182.37	5.509	4.958	5.022	10.544	4.659	0.170	0.285	0.009
104	156	1186.36	5.546	4.973	5.037	10.535	4.624	0.143	0.282	−0.005

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 52$ (Tellurium)										
106	158	1190.18	5.580	4.988	5.051	10.368	4.529	0.111	0.276	−0.020
108	160	1193.88	5.615	5.002	5.065	10.229	4.457	0.084	0.270	−0.033
110	162	1197.19	5.648	5.014	5.077	10.002	4.356	0.066	0.261	−0.039
112	164	1199.87	5.674	5.015	5.078	8.943	3.933	0.064	0.229	−0.028
114	166	1204.53	5.686	4.968	5.032	0.002	−0.001	0.000	0.000	0.000
116	168	1207.53	5.715	4.987	5.051	−0.916	−0.484	0.008	−0.025	0.003
$Z = 54$ (Xenon)										
56	110	897.61	4.550	4.600	4.669	2.723	2.650	0.106	0.177	0.036
58	112	921.11	4.600	4.617	4.686	3.190	2.880	0.101	0.195	0.028
60	114	943.73	4.652	4.636	4.705	3.925	3.281	0.127	0.221	0.035
62	116	965.83	4.704	4.659	4.727	4.692	3.722	0.154	0.248	0.039
64	118	986.90	4.749	4.677	4.745	5.092	3.921	0.137	0.261	0.024
66	120	1007.12	4.793	4.694	4.762	5.405	4.073	0.109	0.272	0.003
68	122	1026.42	4.831	4.707	4.774	5.492	4.042	0.077	0.271	−0.015
70	124	1044.90	4.846	4.700	4.767	4.543	3.228	0.075	0.215	0.000
72	126	1063.00	4.874	4.705	4.772	4.002	2.833	0.066	0.186	0.003
74	128	1080.35	4.903	4.711	4.778	3.496	2.490	0.053	0.160	0.003
76	130	1096.99	4.932	4.717	4.784	2.813	2.052	0.038	0.128	0.002
78	132	1112.56	4.955	4.720	4.788	−1.468	−1.044	−0.003	−0.070	−0.009
80	134	1129.48	4.983	4.728	4.795	0.006	0.010	0.003	0.000	0.002
82	136	1145.30	5.006	4.737	4.804	−0.002	−0.001	0.003	−0.001	0.002
84	138	1153.31	5.064	4.758	4.825	−0.005	−0.003	0.004	−0.002	0.002
86	140	1161.41	5.120	4.790	4.856	2.938	1.738	0.104	0.104	0.050
88	142	1169.72	5.173	4.817	4.883	4.300	2.331	0.136	0.141	0.058
90	144	1177.21	5.222	4.840	4.906	5.186	2.660	0.139	0.163	0.050
92	146	1184.00	5.268	4.863	4.928	5.860	2.892	0.128	0.180	0.036
94	148	1190.49	5.314	4.885	4.950	6.622	3.166	0.126	0.198	0.026
96	150	1196.88	5.362	4.912	4.977	7.842	3.652	0.161	0.223	0.032
98	152	1203.25	5.409	4.940	5.005	9.055	4.155	0.192	0.249	0.034
100	154	1209.15	5.454	4.966	5.030	9.921	4.526	0.196	0.268	0.025
102	156	1214.40	5.493	4.986	5.049	10.288	4.660	0.178	0.274	0.012
104	158	1219.23	5.528	5.000	5.063	10.186	4.562	0.143	0.269	−0.003
106	160	1223.91	5.561	5.013	5.077	9.989	4.434	0.106	0.263	−0.019
108	162	1228.43	5.595	5.027	5.090	9.813	4.335	0.074	0.256	−0.033
110	164	1232.63	5.627	5.037	5.101	9.450	4.162	0.053	0.243	−0.039
112	166	1236.35	5.651	5.040	5.103	8.219	3.635	0.054	0.208	−0.027
114	168	1240.20	5.673	5.039	5.102	5.891	2.730	0.074	0.147	0.002
116	170	1244.49	5.704	5.044	5.107	4.494	2.248	0.074	0.113	0.013
118	172	1248.78	5.734	5.056	5.118	3.866	2.027	0.062	0.097	0.013
$Z = 56$ (Barium)										
58	114	921.37	4.625	4.680	4.748	3.751	3.690	0.126	0.230	0.027
60	116	946.82	4.696	4.717	4.785	5.357	4.921	0.309	0.285	0.084
62	118	970.50	4.738	4.731	4.798	5.700	5.020	0.278	0.295	0.065
64	120	993.02	4.774	4.740	4.774	5.799	4.902	0.215	0.295	0.037
66	122	1014.60	4.810	4.749	4.816	5.868	4.789	0.157	0.294	0.010
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 56$ (Barium)										
68	124	1035.17	4.844	4.756	4.823	5.818	4.592	0.099	0.287	−0.015
70	126	1054.78	4.868	4.756	4.823	5.353	4.098	0.063	0.257	−0.022
72	128	1073.86	4.889	4.756	4.823	4.596	3.476	0.047	0.215	−0.016
74	130	1092.30	4.914	4.759	4.826	3.939	2.977	0.027	0.182	−0.016
76	132	1108.99	4.939	4.761	4.828	−2.720	−1.926	−0.009	−0.135	−0.028
78	134	1127.47	4.963	4.765	4.831	−2.006	−1.419	−0.002	−0.095	−0.022
80	136	1145.38	4.991	4.770	4.837	−0.038	−0.027	0.005	−0.002	0.002
82	138	1162.70	5.014	4.779	4.846	−0.021	−0.017	0.004	−0.001	0.002
84	140	1172.30	5.067	4.799	4.865	−0.025	−0.024	−0.003	−0.011	−0.001
86	142	1179.87	5.117	4.828	4.894	−1.367	−0.896	0.023	−0.054	0.011
88	144	1190.26	5.174	4.860	4.925	4.314	2.535	0.117	0.144	0.046
90	146	1199.10	5.223	4.884	4.949	5.371	3.013	0.130	0.172	0.041
92	148	1207.28	5.268	4.906	4.971	6.158	3.333	0.126	0.191	0.030
94	150	1215.18	5.315	4.932	4.996	7.323	3.849	0.168	0.217	0.036
96	152	1223.42	5.367	4.968	5.032	9.090	4.711	0.288	0.252	0.063
98	154	1231.02	5.411	4.991	5.054	9.902	5.009	0.286	0.269	0.051
100	156	1238.03	5.453	5.012	5.076	10.608	5.266	0.275	0.283	0.037
102	158	1244.08	5.490	5.028	5.091	10.823	5.272	0.238	0.286	0.021
104	160	1249.63	5.521	5.038	5.101	10.524	5.010	0.173	0.276	0.000
106	162	1255.14	5.551	5.049	5.112	10.156	4.737	0.109	0.266	−0.020
108	164	1260.54	5.584	5.061	5.123	9.863	4.535	0.059	0.256	−0.038
110	166	1265.65	5.615	5.071	5.134	9.482	4.316	0.023	0.244	−0.048
112	168	1270.26	5.641	5.078	5.141	8.577	3.891	0.005	0.217	−0.046
114	170	1274.81	5.663	5.084	5.146	6.971	3.204	0.008	0.174	−0.031
116	172	1279.56	5.691	5.090	5.152	5.588	2.678	0.009	0.138	−0.018
118	174	1284.47	5.721	5.096	5.159	4.356	2.220	0.007	0.108	−0.010
120	176	1288.41	5.745	5.102	5.165	−1.687	−0.874	−0.012	−0.044	−0.008
$Z = 58$ (Cerium)										
58	116	920.50	4.666	4.759	4.825	4.994	5.306	0.339	0.285	0.086
60	118	948.73	4.724	4.783	4.850	5.951	5.924	0.395	0.315	0.092
62	120	974.03	4.766	4.796	4.862	6.360	6.064	0.367	0.326	0.074
64	122	997.93	4.801	4.805	4.871	6.524	5.994	0.315	0.328	0.051
66	124	1020.57	4.834	4.811	4.877	6.564	5.832	0.257	0.324	0.027
68	126	1042.02	4.865	4.815	4.881	6.493	5.577	0.187	0.316	0.001
70	128	1062.57	4.891	4.814	4.880	6.142	5.078	0.105	0.295	−0.023
72	130	1082.54	4.905	4.807	4.873	5.127	4.144	0.043	0.242	−0.028
74	132	1101.96	4.928	4.807	4.873	4.365	3.518	0.008	0.203	−0.030
76	134	1120.71	4.952	4.809	4.875	3.571	2.903	−0.018	0.165	−0.031
78	136	1139.10	4.972	4.806	4.872	−1.784	−1.288	−0.004	−0.082	−0.012
80	138	1159.38	4.999	4.811	4.877	−0.063	−0.050	0.006	−0.003	0.003
82	140	1178.06	5.023	4.819	4.885	−0.026	−0.023	0.005	−0.001	0.002
84	142	1188.84	5.075	4.843	4.909	−0.062	−0.046	0.006	−0.002	0.003
86	144	1197.90	5.120	4.868	4.934	−0.838	−0.554	0.016	−0.032	0.007
88	146	1208.28	5.176	4.900	4.964	4.345	2.745	0.119	0.146	0.041
90	148	1218.64	5.225	4.926	4.990	5.661	3.480	0.142	0.183	0.038
92	150	1229.59	5.289	4.978	5.042	8.578	5.302	0.438	0.246	0.108
(continued on next page)										

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 58$ (Cerium)										
94	152	1239.46	5.335	5.003	5.066	9.492	5.661	0.458	0.263	0.103
96	154	1248.55	5.375	5.022	5.086	10.092	5.821	0.427	0.276	0.084
98	156	1257.28	5.417	5.043	5.106	10.777	6.028	0.402	0.290	0.066
100	158	1265.40	5.458	5.063	5.125	11.430	6.229	0.379	0.303	0.049
102	160	1272.27	5.495	5.078	5.141	11.771	6.271	0.342	0.308	0.034
104	162	1278.37	5.524	5.087	5.150	11.501	5.986	0.264	0.299	0.012
106	164	1284.52	5.549	5.092	5.154	10.781	5.434	0.146	0.281	−0.018
108	166	1290.72	5.579	5.100	5.163	10.332	5.091	0.065	0.269	−0.041
110	168	1296.66	5.610	5.111	5.173	9.983	4.852	0.010	0.258	−0.057
112	170	1301.99	5.638	5.120	5.182	9.409	4.545	−0.022	0.240	−0.062
114	172	1306.85	5.659	5.125	5.187	8.069	3.925	−0.023	0.202	−0.050
116	174	1311.91	5.682	5.129	5.191	6.362	3.126	−0.017	0.157	−0.034
118	176	1317.39	5.708	5.130	5.192	4.079	1.991	−0.010	0.099	−0.015
120	178	1323.07	5.733	5.137	5.199	−1.587	−0.667	−0.007	−0.037	−0.005
122	180	1329.76	5.759	5.151	5.213	−0.001	−0.005	0.000	0.000	0.000
124	182	1336.01	5.786	5.166	5.228	0.004	−0.002	0.000	0.000	0.000
126	184	1340.66	5.805	5.181	5.242	0.003	−0.002	0.000	0.000	0.000
$Z = 60$ (Neodymium)										
60	120	948.44	4.744	4.838	4.904	6.271	6.621	0.439	0.324	0.088
62	122	975.49	4.784	4.847	4.913	6.671	6.715	0.409	0.341	0.073
64	124	1000.90	4.818	4.854	4.920	6.840	6.633	0.360	0.341	0.053
66	126	1024.74	4.852	4.861	4.927	6.940	6.516	0.312	0.339	0.034
68	128	1047.28	4.885	4.869	4.934	7.016	6.386	0.257	0.336	0.012
70	130	1068.93	4.918	4.876	4.941	7.063	6.219	0.200	0.332	−0.007
72	132	1089.50	4.924	4.860	4.926	5.823	5.041	0.097	0.272	−0.021
74	134	1109.62	4.943	4.856	4.921	4.923	4.250	0.034	0.229	−0.029
76	136	1129.10	4.964	4.855	4.920	4.087	3.567	−0.009	0.189	−0.034
78	138	1148.70	4.983	4.850	4.915	−2.520	−1.998	0.013	−0.119	−0.012
80	140	1169.49	5.006	4.851	4.916	−0.109	−0.094	0.008	−0.005	0.003
82	142	1189.44	5.028	4.858	4.923	−0.003	−0.003	0.007	−0.002	0.003
84	144	1201.54	5.079	4.881	4.946	−0.099	−0.083	0.008	−0.004	0.003
86	146	1212.39	5.124	4.908	4.973	−1.632	−1.220	0.042	−0.065	0.017
88	148	1224.55	5.181	4.941	5.005	4.756	3.296	0.167	0.160	0.049
90	150	1237.01	5.237	4.982	5.046	7.078	5.046	0.325	0.221	0.078
92	152	1249.98	5.297	5.024	5.087	9.156	6.088	0.502	0.263	0.109
94	154	1261.19	5.338	5.046	5.109	9.904	6.354	0.504	0.277	0.100
96	156	1271.61	5.378	5.065	5.128	10.523	6.527	0.475	0.289	0.083
98	158	1281.63	5.418	5.085	5.147	11.202	6.727	0.450	0.302	0.066
100	160	1290.86	5.458	5.103	5.165	11.807	6.882	0.423	0.313	0.049
102	162	1298.75	5.495	5.120	5.182	12.248	6.953	0.390	0.319	0.035
104	164	1305.72	5.526	5.131	5.193	12.214	6.781	0.329	0.315	0.018
106	166	1312.51	5.550	5.136	5.198	11.514	6.256	0.217	0.298	−0.009
108	168	1319.21	5.578	5.143	5.205	11.035	5.881	0.127	0.285	−0.032
110	170	1325.67	5.609	5.152	5.213	10.662	5.602	0.057	0.275	−0.051
112	172	1331.62	5.637	5.161	5.222	10.224	5.320	0.005	0.261	−0.062
114	174	1336.84	5.659	5.165	5.227	9.143	4.792	−0.013	0.230	−0.057
(continued on next page)										

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 60$ (Neodymium)										
116	176	1342.53	5.675	5.161	5.223	−6.473	−3.055	0.032	−0.174	−0.028
118	178	1348.44	5.699	5.166	5.227	−4.818	−2.242	−0.013	−0.125	−0.033
120	180	1354.66	5.723	5.173	5.235	−3.167	−1.459	−0.024	−0.078	−0.024
122	182	1361.39	5.749	5.182	5.243	−0.001	−0.001	0.000	0.000	0.000
124	184	1368.60	5.776	5.196	5.257	0.009	0.000	0.000	0.000	0.000
126	186	1374.10	5.796	5.209	5.270	0.004	0.000	0.000	0.000	0.000
$Z = 62$ (Samarium)										
60	122	944.01	4.763	4.889	4.954	6.454	7.132	0.429	0.345	0.074
62	124	973.20	4.802	4.897	4.961	6.884	7.250	0.403	0.354	0.059
64	126	1000.51	4.833	4.900	4.965	6.986	7.082	0.348	0.351	0.040
66	128	1025.90	4.865	4.905	4.970	7.065	6.919	0.297	0.346	0.022
68	130	1050.02	4.898	4.911	4.976	7.128	6.758	0.238	0.343	0.001
70	132	1073.29	4.932	4.920	4.985	7.261	6.657	0.192	0.341	−0.016
72	134	1095.28	4.988	4.951	5.015	8.298	7.239	0.267	0.363	0.000
74	136	1115.80	4.963	4.910	4.974	5.774	5.248	0.101	0.263	−0.018
76	138	1135.85	4.979	4.903	4.968	4.749	4.395	0.034	0.217	−0.027
78	140	1156.68	4.996	4.896	4.960	−3.309	−2.877	0.049	−0.161	−0.006
80	142	1177.09	5.012	4.889	4.954	0.631	−0.606	0.012	−0.029	0.004
82	144	1198.18	5.033	4.895	4.960	−0.054	−0.062	0.009	−0.003	0.004
84	146	1211.53	5.083	4.917	4.982	−0.313	−0.291	0.013	−0.014	0.005
86	148	1225.40	5.134	4.950	5.014	3.099	2.430	0.152	0.112	0.049
88	150	1239.35	5.187	4.984	5.047	5.245	3.963	0.235	0.176	0.059
90	152	1253.64	5.245	5.024	5.087	7.563	5.531	0.376	0.235	0.081
92	154	1267.60	5.296	5.057	5.120	9.109	6.346	0.477	0.265	0.096
94	156	1280.17	5.337	5.078	5.141	9.847	6.621	0.474	0.279	0.086
96	158	1291.98	5.376	5.098	5.161	10.512	6.835	0.449	0.292	0.070
98	160	1303.26	5.415	5.117	5.180	11.195	7.051	0.425	0.305	0.054
100	162	1313.66	5.454	5.135	5.197	11.772	7.197	0.395	0.315	0.038
102	164	1322.84	5.489	5.152	5.213	12.184	7.259	0.356	0.321	0.022
104	166	1331.06	5.520	5.164	5.226	12.180	7.108	0.302	0.317	0.007
106	168	1338.85	5.549	5.174	5.235	11.910	6.845	0.238	0.308	−0.009
108	170	1346.17	5.579	5.183	5.245	11.663	6.621	0.179	0.300	−0.025
110	172	1353.12	5.608	5.192	5.254	11.366	6.390	0.115	0.291	−0.043
112	174	1359.64	5.638	5.202	5.263	11.059	6.152	0.060	0.280	−0.055
114	176	1365.25	5.661	5.207	5.268	10.169	5.676	0.031	0.255	−0.054
116	178	1371.56	5.672	5.198	5.259	−7.373	−3.775	0.061	−0.201	−0.026
118	180	1377.75	5.695	5.204	5.265	−6.246	−3.195	0.029	−0.165	−0.028
120	182	1384.17	5.717	5.209	5.270	−4.635	−2.398	−0.007	−0.119	−0.030
122	184	1390.43	5.740	5.212	5.273	−1.584	−0.899	−0.005	−0.039	−0.005
124	186	1398.26	5.766	5.223	5.284	0.004	−0.001	−0.001	0.000	0.000
126	188	1404.63	5.786	5.236	5.296	0.002	−0.001	−0.001	0.000	0.000
$Z = 64$ (Gadolinium)										
64	128	997.53	4.845	4.940	5.004	6.899	7.248	0.298	0.350	0.023
66	130	1024.75	4.877	4.944	5.009	7.016	7.123	0.244	0.348	0.004
68	132	1050.66	4.908	4.954	4.908	7.106	6.991	0.182	0.346	−0.017
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 64$ (Gadolinium)										
70	134	1075.62	4.942	4.959	5.024	7.257	6.915	0.138	0.344	−0.033
72	136	1098.81	4.992	4.985	5.049	8.106	7.351	0.202	0.359	−0.017
74	138	1120.67	5.014	4.987	5.051	7.812	6.973	0.208	0.334	−0.007
76	140	1141.60	5.032	4.985	5.049	7.302	6.488	0.190	0.305	−0.003
78	142	1163.12	5.007	4.937	5.002	−3.732	−3.426	0.054	−0.184	−0.010
80	144	1184.62	5.027	4.936	5.001	−2.791	−2.635	0.033	−0.133	−0.006
82	146	1205.43	5.039	4.930	4.994	−0.082	−0.100	0.013	−0.004	0.004
84	148	1220.91	5.091	4.958	5.022	−1.728	−1.728	0.065	−0.077	0.021
86	150	1236.85	5.142	4.991	5.055	3.753	3.218	0.209	0.135	0.057
88	152	1252.24	5.191	5.020	5.083	5.306	4.220	0.265	0.178	0.063
90	154	1267.38	5.244	5.055	5.118	7.299	5.549	0.357	0.228	0.073
92	156	1282.55	5.297	5.089	5.152	9.032	6.570	0.446	0.266	0.082
94	158	1296.59	5.337	5.112	5.174	9.854	6.933	0.444	0.282	0.072
96	160	1309.87	5.376	5.132	5.194	10.565	7.194	0.421	0.296	0.058
98	162	1322.49	5.414	5.150	5.212	11.215	7.395	0.394	0.308	0.042
100	164	1334.13	5.451	5.167	5.229	11.761	7.525	0.358	0.318	0.025
102	166	1344.71	5.486	5.184	5.245	12.169	7.589	0.317	0.323	0.010
104	168	1354.15	5.516	5.197	5.258	12.207	7.472	0.269	0.320	−0.004
106	170	1362.86	5.546	5.208	5.269	12.071	7.289	0.219	0.313	−0.017
108	172	1370.93	5.576	5.218	5.279	11.918	7.115	0.166	0.307	−0.031
110	174	1378.65	5.606	5.228	5.289	11.704	6.923	0.108	0.300	−0.047
112	176	1385.97	5.636	5.238	5.299	11.531	6.741	0.060	0.292	−0.059
114	178	1392.18	5.665	5.247	5.308	11.192	6.486	0.048	0.277	−0.055
116	180	1398.90	5.668	5.230	5.291	−7.770	−4.222	0.051	−0.215	−0.034
118	182	1405.82	5.691	5.238	5.299	−7.115	−3.851	0.038	−0.191	−0.031
120	184	1412.51	5.712	5.242	5.303	−5.658	−3.154	0.010	−0.148	−0.030
122	186	1419.51	5.734	5.248	5.308	−4.048	−2.336	−0.011	−0.102	−0.025
124	188	1426.55	5.757	5.249	5.310	−0.135	−0.093	−0.002	−0.003	−0.001
126	190	1433.77	5.778	5.261	5.321	0.019	0.011	−0.002	0.000	−0.001
128	192	1435.90	8.827	5.276	5.336	0.106	0.058	−0.002	0.002	−0.001
130	194	1437.75	5.874	5.301	5.361	4.451	2.243	0.178	0.086	0.054
132	196	1441.01	5.921	5.330	5.390	7.231	3.377	0.298	0.128	0.079
134	198	1443.46	5.963	5.353	5.413	8.883	3.937	0.333	0.151	0.079
136	200	1445.35	6.004	5.374	5.433	10.156	4.354	0.338	0.170	0.070
$Z = 66$ (Dysprosium)										
66	132	1020.93	4.886	4.985	5.049	6.938	7.276	0.170	0.348	−0.018
68	134	1048.87	4.919	4.991	5.054	7.042	7.158	0.104	0.346	−0.040
70	136	1075.72	4.952	4.998	5.062	7.188	7.086	0.056	0.345	−0.057
72	138	1099.89	4.990	5.012	5.076	7.579	7.197	0.085	0.346	−0.047
74	140	1122.86	5.015	5.017	5.080	7.447	6.941	0.107	0.326	−0.033
76	142	1145.08	5.039	5.021	5.084	7.238	6.657	0.109	0.306	−0.026
78	144	1167.97	5.018	4.977	5.041	−3.977	−3.808	0.042	−0.198	−0.019
80	146	1190.50	5.040	4.978	5.042	−3.422	−3.313	0.027	−0.165	−0.017
82	148	1211.34	5.044	4.964	5.028	−0.122	−0.158	0.016	−0.006	0.005
84	150	1228.78	5.098	4.995	5.059	−2.201	−2.294	0.080	−0.090	0.023
86	152	1246.26	5.147	5.027	5.091	3.995	3.630	0.209	0.145	0.051
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 66$ (Dysprosium)										
88	154	1262.96	5.194	5.053	5.116	5.302	4.415	0.253	0.179	0.056
90	156	1278.97	5.241	5.081	5.143	6.734	5.257	0.320	0.211	0.064
92	158	1294.85	5.291	5.112	5.174	8.384	6.243	0.410	0.247	0.075
94	160	1309.98	5.335	5.139	5.201	9.486	6.858	0.421	0.273	0.060
96	162	1324.38	5.375	5.161	5.223	10.398	7.317	0.402	0.292	0.051
98	164	1338.14	5.414	5.181	5.242	11.122	7.600	0.367	0.306	0.033
100	166	1351.01	5.450	5.197	5.258	11.667	7.746	0.316	0.316	0.014
102	168	1362.95	5.483	5.213	5.274	12.030	7.791	0.262	0.322	−0.003
104	170	1373.74	5.511	5.225	5.286	12.009	7.638	0.205	0.318	−0.018
106	172	1383.70	5.540	5.236	5.297	11.874	7.453	0.149	0.311	−0.032
108	174	1392.99	5.570	5.246	5.307	11.757	7.300	0.091	0.306	−0.047
110	176	1401.88	5.600	5.257	5.317	11.605	7.140	0.034	0.299	−0.062
112	178	1410.27	5.631	5.267	5.328	11.478	6.984	−0.011	0.293	−0.037
114	180	1417.22	5.659	5.276	5.337	11.144	6.724	−0.022	0.279	−0.070
116	182	1423.80	5.663	5.267	5.327	8.489	5.193	−0.007	0.209	−0.048
118	184	1431.15	5.683	5.267	5.327	6.856	4.230	−0.010	0.167	−0.036
120	186	1439.55	5.708	5.273	5.334	−6.378	−3.706	0.007	−0.169	−0.035
122	188	1446.99	5.729	5.278	5.338	−4.786	−2.908	−0.017	−0.037	−0.019
124	190	1453.80	5.749	5.276	5.336	−0.906	−0.678	−0.003	−0.023	−0.002
126	192	1461.76	5.770	5.286	5.346	0.034	0.025	−0.003	0.001	−0.001
128	194	1464.51	5.817	5.301	5.361	0.261	0.177	−0.003	0.006	−0.001
130	196	1467.96	5.867	5.334	5.393	5.301	2.951	0.224	0.103	0.059
132	198	1471.93	5.912	5.362	5.421	7.636	3.907	0.317	0.138	0.075
134	200	1475.18	5.953	5.385	5.444	9.157	4.447	0.347	0.159	0.074
$Z = 68$ (Erbium)										
70	138	1074.06	4.963	5.038	5.101	7.159	7.274	−0.031	0.347	−0.079
72	140	1099.38	4.992	5.044	5.107	7.195	7.128	−0.029	0.336	−0.075
74	142	1123.66	5.004	5.036	5.099	6.470	6.439	−0.047	0.297	−0.069
76	144	1147.01	5.022	5.033	5.096	5.903	5.899	−0.053	0.257	−0.023
78	146	1171.18	5.027	5.014	5.077	−4.109	4.081	0.023	−0.207	−0.029
80	148	1194.79	5.049	5.016	5.079	−3.676	−3.670	0.012	−0.179	−0.027
82	150	1215.94	5.049	4.997	5.061	−0.188	−0.252	0.020	−0.009	0.006
84	152	1234.57	5.102	5.028	5.091	2.239	2.427	0.093	0.093	0.023
86	154	1253.69	5.151	5.060	5.123	3.991	3.782	0.171	0.147	0.038
88	156	1271.50	5.196	5.084	5.147	5.173	4.482	0.204	0.177	0.041
90	158	1288.48	5.240	5.107	5.170	6.324	5.110	0.243	0.203	0.045
92	160	1305.14	5.287	5.134	5.196	7.723	5.895	0.329	0.231	0.059
94	162	1321.34	5.331	5.160	5.222	8.905	6.549	0.372	0.255	0.059
96	164	1336.71	5.372	5.184	5.245	9.902	7.094	0.363	0.277	0.046
98	166	1351.50	5.411	5.205	5.267	10.806	7.570	0.323	0.298	0.026
100	168	1365.61	5.448	5.224	5.284	11.437	7.818	0.257	0.312	0.029
102	170	1378.90	5.480	5.239	5.300	11.775	7.865	0.190	0.317	−0.016
104	172	1391.15	5.507	5.251	5.311	11.725	7.692	0.123	0.313	−0.032
106	174	1402.55	5.536	5.262	5.322	11.626	7.531	0.060	0.308	−0.048
108	176	1413.23	5.566	5.273	5.333	11.555	7.400	0.000	0.303	−0.063
110	178	1423.37	5.596	5.284	5.344	11.449	7.271	−0.055	0.298	−0.078

(continued on next page)

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 68$ (Erbium)										
112	180	1432.87	5.627	5.295	5.355	11.332	7.127	−0.098	0.291	−0.088
114	182	1440.62	5.652	5.302	5.362	10.832	6.770	−0.109	0.273	−0.086
116	184	1448.60	5.660	5.286	5.347	−8.096	−4.821	0.002	−0.229	−0.052
118	186	1457.12	5.683	5.296	5.356	−7.769	−4.581	0.004	−0.212	−0.046
120	188	1465.01	5.704	5.301	5.361	−6.801	−4.079	−0.005	−0.180	−0.040
122	190	1472.95	5.724	5.304	5.364	−5.115	−3.220	−0.033	−0.133	−0.037
124	192	1480.48	5.744	5.305	5.365	−2.446	−1.760	−0.023	−0.062	−0.013
126	194	1448.65	5.762	5.310	5.370	0.060	0.050	−0.005	0.002	−0.001
128	196	1492.05	5.808	5.327	5.386	0.112	0.085	−0.006	0.003	−0.001
130	198	1496.26	5.857	5.359	5.419	5.246	3.137	0.196	0.104	0.049
132	200	1500.92	5.902	5.387	5.446	7.613	4.123	0.284	0.140	0.065
134	202	1504.95	5.943	5.410	5.469	9.154	4.691	0.309	0.161	0.063
136	204	1508.47	5.982	5.431	5.490	10.463	5.131	0.310	0.179	0.056
138	206	1511.71	6.021	5.453	5.512	11.826	5.591	0.327	0.197	0.051
140	208	1514.94	6.063	5.483	5.542	13.887	6.396	0.443	0.221	0.065
$Z = 70$ (Ytterbium)										
76	146	1147.13	5.019	5.051	5.114	−4.871	−4.864	0.037	−0.251	−0.033
78	148	1172.48	5.034	5.048	5.111	−4.103	−4.206	−0.002	−0.207	−0.038
80	150	1197.32	5.056	5.049	5.112	−3.688	−3.789	−0.012	−0.180	−0.035
82	152	1219.32	5.055	5.030	5.093	−0.223	−0.309	0.021	−0.011	0.006
84	154	1239.23	5.107	5.059	5.122	2.149	2.408	0.063	0.090	0.014
86	156	1259.33	5.154	5.090	5.152	3.808	3.737	0.113	0.142	0.023
88	158	1278.20	5.198	5.113	5.175	4.902	4.413	0.126	0.171	0.021
90	160	1296.26	5.241	5.135	5.197	5.942	4.982	0.140	0.195	0.020
92	162	1313.73	5.283	5.156	5.219	7.114	5.619	0.194	0.219	0.027
94	164	1330.98	5.329	5.184	5.245	8.476	6.394	0.283	0.246	0.040
96	166	1347.53	5.371	5.208	5.269	9.541	6.988	0.310	0.267	0.036
98	168	1363.39	5.409	5.228	5.289	10.370	7.401	0.281	0.285	0.020
100	170	1378.53	5.445	5.246	5.306	10.987	7.658	0.212	0.299	−0.002
102	172	1393.03	5.476	5.261	5.321	11.304	7.710	0.135	0.304	−0.023
104	174	1406.72	5.504	5.273	5.333	11.284	7.557	0.061	0.301	−0.040
106	176	1419.55	5.532	5.285	5.345	11.260	7.453	−0.007	0.298	−0.057
108	178	1431.57	5.562	5.297	5.357	11.244	7.367	−0.070	0.295	−0.073
110	180	1442.91	5.592	5.308	5.368	11.166	7.256	−0.125	0.290	−0.087
112	182	1453.46	5.622	5.319	5.379	11.012	7.094	−0.165	0.283	−0.097
114	184	1462.22	5.641	5.321	5.381	10.019	6.404	−0.163	0.252	−0.089
116	186	1471.21	5.653	5.319	5.379	8.286	5.299	−0.131	0.204	−0.069
118	188	1480.14	5.674	5.323	5.383	7.228	4.716	−0.134	0.177	−0.063
120	190	1488.74	5.699	5.326	5.386	−6.939	−4.270	−0.020	−0.183	−0.043
122	192	1497.34	5.718	5.328	5.388	−5.121	−3.299	−0.054	−0.133	−0.041
124	194	1505.75	5.738	5.330	5.390	−2.771	−1.970	−0.051	−0.070	−0.022
126	196	1514.49	5.756	5.334	5.394	0.025	0.021	−0.006	0.001	−0.001
128	198	1518.56	5.801	5.351	5.411	0.320	0.255	−0.007	0.008	−0.002
130	200	1523.06	5.847	5.382	5.441	4.790	3.043	0.133	0.098	0.033
132	202	1528.31	5.892	5.409	5.468	7.329	4.132	0.224	0.136	0.051
134	204	1533.03	5.932	5.432	5.491	8.918	4.745	0.244	0.159	0.050
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 70$ (Ytterbium)										
136	206	1537.33	5.971	5.453	5.512	10.236	5.211	0.236	0.178	0.042
138	208	1541.28	6.010	5.474	5.533	11.529	5.651	0.240	0.195	0.035
140	210	1544.99	6.050	5.501	5.559	13.320	6.349	0.330	0.216	0.044
$Z = 72$ (Hafnium)										
80	152	1197.93	5.060	5.078	5.141	−3.389	−3.556	−0.047	−0.163	−0.042
82	154	1221.51	5.061	5.062	5.125	−0.189	−0.266	0.019	−0.009	0.005
84	156	1242.72	5.112	5.089	5.152	−2.029	−2.290	0.038	−0.090	0.008
86	158	1263.39	5.157	5.117	5.179	3.453	3.483	0.055	0.131	0.009
88	160	1283.33	5.200	5.141	5.203	4.471	4.169	0.045	0.159	0.002
90	162	1302.40	5.242	5.162	5.224	5.518	4.772	0.050	0.184	−0.001
92	164	1320.74	5.283	5.183	5.244	6.605	5.371	0.083	0.208	0.003
94	166	1338.79	5.329	5.208	5.270	8.073	6.256	0.192	0.237	0.021
96	168	1356.58	5.377	5.239	5.300	9.567	7.254	0.306	0.268	0.032
98	170	1373.61	5.414	5.259	5.319	10.345	7.629	0.288	0.283	0.020
100	172	1389.81	5.446	5.272	5.332	10.707	7.650	0.205	0.289	−0.001
102	174	1405.42	5.474	5.283	5.343	10.797	7.496	0.112	0.288	−0.022
104	176	1420.40	5.500	5.293	5.354	10.767	7.307	0.032	0.284	−0.040
106	178	1434.42	5.528	5.304	5.364	10.706	7.147	−0.039	0.280	−0.056
108	180	1447.58	5.555	5.315	5.375	10.627	7.003	−0.104	0.275	−0.072
110	182	1459.94	5.584	5.326	5.386	10.488	6.843	−0.159	0.269	−0.085
112	184	1471.52	5.612	5.335	5.395	10.175	6.584	−0.199	0.258	−0.093
114	186	1482.07	5.629	5.339	5.399	9.148	5.899	−0.200	0.228	−0.087
116	188	1492.45	5.648	5.344	5.404	8.134	5.281	−0.202	0.200	−0.080
118	190	1502.28	5.670	5.349	5.408	7.181	4.762	−0.203	0.175	−0.074
120	192	1511.27	5.693	5.352	5.411	6.032	4.186	−0.185	0.147	−0.061
122	194	1520.11	5.711	5.350	5.409	−4.810	−3.123	−0.081	−0.123	−0.043
124	196	1529.56	5.731	5.353	5.412	−2.522	−1.789	−0.068	−0.063	−0.023
126	198	1539.22	5.750	5.357	5.416	0.027	0.024	−0.007	0.001	−0.001
128	200	1543.99	5.794	5.375	5.434	0.217	0.175	−0.009	0.005	−0.002
130	202	1548.49	5.836	5.403	5.462	3.912	2.633	0.058	0.083	0.015
132	204	1554.21	5.881	5.430	5.488	6.736	3.912	0.155	0.127	0.038
134	206	1559.58	5.922	5.453	5.511	8.464	4.615	0.174	0.152	0.038
136	208	1564.60	5.961	5.474	5.533	9.849	5.144	0.162	0.172	0.029
138	210	1569.21	5.999	5.495	5.553	11.085	5.586	0.153	0.189	0.021
140	212	1573.51	6.037	5.518	5.575	12.520	6.134	0.186	0.208	0.020
142	214	1578.47	6.092	5.570	5.628	16.353	8.126	0.576	0.252	0.067
144	216	1583.03	6.130	5.595	5.652	17.720	8.649	0.618	0.268	0.064
$Z = 74$ (Tungsten)										
80	154	1195.64	5.056	5.098	5.160	1.878	2.264	−0.066	0.085	−0.023
82	156	1222.58	5.068	5.094	5.156	−0.129	−0.183	0.015	−0.006	0.004
84	158	1244.50	5.115	5.117	5.179	−1.523	−1.747	0.017	−0.066	0.003
86	160	1265.97	5.159	5.143	5.205	2.903	2.970	0.014	0.110	0.000
88	162	1286.84	5.200	5.166	5.227	3.845	3.649	−0.007	0.137	−0.008
90	164	1306.58	5.241	5.186	5.247	4.778	4.213	−0.016	0.161	−0.013
92	166	1325.60	5.281	5.205	5.266	5.843	4.817	0.005	0.185	−0.011
(continued on next page)										

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 74$ (Tungsten)										
94	168	1344.52	5.341	5.246	5.307	8.416	6.757	0.267	0.243	0.032
96	170	1363.77	5.389	5.277	5.338	9.913	7.833	0.372	0.274	0.038
98	172	1381.91	5.425	5.295	5.355	10.601	8.139	0.342	0.287	0.025
100	174	1399.11	5.457	5.309	5.369	11.021	8.227	0.275	0.294	0.007
102	176	1415.65	5.483	5.319	5.379	11.058	8.010	0.172	0.292	−0.014
104	178	1431.62	5.505	5.325	5.384	10.794	7.569	0.048	0.283	−0.036
106	180	1446.73	5.528	5.331	5.390	10.525	7.183	−0.057	0.273	−0.056
108	182	1461.12	5.554	5.339	5.399	10.312	6.902	−0.140	0.265	−0.073
110	184	1474.63	5.580	5.348	5.408	10.058	6.635	−0.201	0.256	−0.086
112	186	1487.40	5.605	5.357	5.416	9.615	6.279	−0.244	0.241	−0.094
114	188	1499.50	5.624	5.362	5.421	8.694	5.654	−0.256	0.215	−0.091
116	190	1511.27	5.644	5.367	5.427	7.812	5.103	−0.263	0.191	−0.087
118	192	1522.14	5.665	5.371	5.431	6.902	4.599	−0.253	0.168	−0.079
120	194	1531.93	5.687	5.373	5.432	5.710	3.972	−0.223	0.138	−0.065
122	196	1541.51	5.704	5.370	5.429	−4.264	−2.747	−0.108	−0.106	−0.044
124	198	1551.87	5.724	5.373	5.432	−1.051	0.779	−0.027	−0.025	−0.007
126	200	1562.81	5.745	5.379	5.438	0.029	0.025	−0.007	0.001	−0.001
128	202	1568.32	5.788	5.398	5.457	0.325	0.254	−0.009	0.008	−0.002
130	204	1572.84	5.827	5.422	5.481	2.857	1.979	0.010	0.061	0.003
132	206	1578.72	5.869	5.448	5.507	5.703	3.373	0.093	0.109	0.025
134	208	1584.57	5.910	5.471	5.529	7.654	4.193	0.124	0.138	0.030
136	210	1590.10	5.949	5.493	5.551	9.123	4.786	0.115	0.159	0.023
138	212	1595.24	5.987	5.513	5.571	10.382	5.272	0.100	0.177	0.015
140	214	1600.08	6.025	5.536	5.594	11.785	5.850	0.116	0.196	0.011
142	216	1606.11	6.084	5.594	5.651	16.280	8.381	0.554	0.251	0.061
144	218	1611.43	6.121	5.617	5.673	17.546	8.859	0.572	0.266	0.055
146	220	1616.20	6.153	5.635	5.692	18.296	9.076	0.532	0.271	0.042
148	222	1620.58	6.184	5.652	5.709	18.897	9.214	0.474	0.282	0.027
150	224	1624.59	6.216	5.669	5.725	19.487	9.354	0.418	0.289	0.012
$Z = 76$ (Osmium)										
84	160	1244.57	5.118	5.142	5.204	0.518	0.603	−0.008	0.022	−0.002
86	162	1267.07	5.160	5.166	5.228	−2.075	−2.159	0.001	−0.083	−0.003
88	164	1288.71	5.200	5.189	5.250	2.993	2.829	−0.023	0.106	−0.009
90	166	1309.18	5.238	5.207	5.268	3.636	3.249	−0.052	0.123	−0.018
92	168	1328.77	5.276	5.225	5.285	4.525	3.775	−0.055	0.144	−0.021
94	170	1347.90	5.315	5.243	5.303	5.597	4.405	−0.035	0.169	−0.018
96	172	1368.48	5.392	5.304	5.364	9.701	7.828	0.364	0.267	0.037
98	174	1387.66	5.429	5.323	5.383	10.468	8.247	0.334	0.282	0.023
100	176	1406.00	5.462	5.339	5.399	10.941	8.416	0.272	0.291	0.006
102	178	1423.80	5.490	5.352	5.411	11.141	8.365	0.189	0.293	−0.013
104	180	1440.93	5.516	5.362	5.421	11.149	8.163	0.099	0.290	−0.030
106	182	1456.85	5.539	5.368	5.428	10.936	7.815	−0.002	0.282	−0.049
108	184	1471.99	5.562	5.374	5.434	10.622	7.419	−0.099	0.271	−0.067
110	186	1486.18	5.586	5.380	5.439	10.164	6.945	−0.177	0.256	−0.080
112	188	1499.71	5.604	5.381	5.440	9.267	6.172	−0.231	0.229	−0.085
114	190	1513.18	5.618	5.380	5.439	8.022	5.225	−0.246	0.194	−0.081

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 76$ (Osmium)										
116	192	1526.39	5.637	5.384	5.443	7.134	4.624	−0.257	0.170	−0.079
118	194	1538.76	5.658	5.386	5.445	6.159	4.041	−0.245	0.145	−0.071
120	196	1550.00	5.679	5.389	5.448	4.928	3.345	−0.205	0.116	−0.056
122	198	1561.59	5.698	5.390	5.449	−3.658	−2.315	−0.114	−0.089	−0.039
124	200	1573.41	5.720	5.394	5.453	0.183	0.133	−0.010	0.004	−0.002
126	202	1585.10	5.741	5.401	5.459	0.030	0.027	−0.007	0.001	−0.001
128	204	1591.39	5.783	5.420	5.479	0.187	0.142	−0.009	0.004	−0.002
130	206	1596.08	5.819	5.441	5.499	1.446	0.988	−0.006	0.031	−0.001
132	208	1601.97	5.858	5.466	5.524	4.309	2.544	0.050	0.082	0.014
134	210	1608.10	5.898	5.488	5.546	6.481	3.485	0.100	0.115	0.026
136	212	1613.99	5.937	5.509	5.567	8.045	4.139	0.100	0.138	0.023
138	214	1619.56	5.974	5.530	5.587	9.349	4.682	0.082	0.157	0.015
140	216	1625.26	6.032	5.583	5.640	13.808	7.350	0.441	0.219	0.056
142	218	1631.64	6.075	5.614	5.670	15.869	8.353	0.526	0.245	0.057
144	220	1637.68	6.112	5.639	5.695	17.281	8.967	0.538	0.262	0.049
146	222	1643.28	6.146	5.659	5.716	18.176	9.294	0.501	0.273	0.037
148	224	1648.50	6.177	5.678	5.734	18.883	9.523	0.449	0.282	0.022
150	226	1653.31	6.209	5.696	5.752	19.546	9.724	0.399	0.290	0.008
152	228	1657.62	6.240	5.712	5.767	20.038	9.831	0.342	0.295	−0.007
$Z = 78$ (Platinum)										
86	164	1267.40	5.165	5.193	5.254	−1.442	−1.475	−0.003	−0.056	−0.002
88	166	1289.23	5.201	5.212	5.273	1.778	1.611	−0.004	0.061	−0.002
90	168	1310.64	5.236	5.229	5.290	1.979	1.743	−0.031	0.066	−0.010
92	170	1331.08	5.266	5.244	5.304	9.574	8.614	−0.004	0.032	−0.002
94	172	1350.43	5.298	5.257	5.318	5.962	5.142	0.001	0.019	0.000
96	174	1371.13	5.393	5.326	5.386	9.281	7.564	0.362	0.252	0.039
98	176	1391.33	5.433	5.350	5.409	10.249	8.243	0.333	0.274	0.023
100	178	1410.84	5.467	5.368	5.427	10.808	8.537	0.268	0.286	0.005
102	180	1429.90	5.497	5.383	5.442	11.147	8.630	0.192	0.292	−0.013
104	182	1448.22	5.525	5.396	5.455	11.349	8.611	0.120	0.293	−0.029
106	184	1465.07	5.551	5.405	5.464	11.307	8.423	0.042	0.289	−0.044
108	186	1480.98	5.575	5.413	5.471	11.112	8.132	−0.037	0.281	−0.059
110	188	1495.73	5.597	5.416	5.475	10.612	7.599	−0.111	0.265	−0.070
112	190	1509.70	5.596	5.397	5.456	8.323	5.545	−0.174	0.201	−0.065
114	192	1524.55	5.609	5.392	5.451	6.879	4.351	−0.200	0.161	−0.063
116	194	1539.21	5.628	5.395	5.454	5.964	3.710	−0.209	0.137	−0.061
118	196	1553.22	5.650	5.396	5.455	−5.564	−3.385	−0.100	−0.136	−0.041
120	198	1566.89	5.671	5.403	5.462	−4.432	−2.706	−0.099	−0.105	−0.035
122	200	1580.42	5.693	5.409	5.468	−3.068	−1.906	−0.101	−0.071	−0.032
124	202	1593.52	5.717	5.415	5.473	0.113	0.077	−0.009	0.003	−0.002
126	204	1605.85	5.739	5.421	5.480	0.031	0.028	−0.007	0.001	−0.001
128	206	1612.97	5.779	5.441	5.499	0.118	0.086	−0.008	0.003	−0.002
130	208	1618.33	5.813	5.461	5.519	0.305	0.202	−0.010	0.006	−0.002
132	210	1623.98	5.848	5.483	5.541	2.238	1.309	0.009	0.014	0.004
134	212	1630.28	5.886	5.505	5.563	4.638	2.420	0.067	0.082	0.018
136	214	1636.48	5.924	5.525	5.583	6.465	3.173	0.099	0.108	0.024

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties

See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 78$ (Platinum)										
138	216	1642.39	5.961	5.545	5.602	7.852	3.760	0.093	0.128	0.020
140	218	1648.52	6.020	5.597	5.654	12.910	6.859	0.433	0.202	0.057
142	220	1655.39	6.064	5.630	5.686	15.189	8.073	0.509	0.232	0.056
144	222	1662.09	6.103	5.657	5.714	16.792	8.865	0.514	0.278	−0.060
146	224	1668.47	6.137	5.680	5.736	17.822	9.304	0.474	0.267	0.034
148	226	1674.44	6.169	5.700	5.756	18.612	9.602	0.420	0.277	0.019
150	228	1679.97	6.200	5.718	5.773	19.279	9.820	0.365	0.285	0.005
152	230	1684.92	6.231	5.734	5.789	19.758	9.931	0.302	0.290	−0.010
154	232	1689.49	6.261	5.748	5.804	20.065	9.961	0.229	0.293	−0.025
156	234	1693.79	6.288	5.762	5.818	20.143	9.886	0.151	0.293	−0.040
158	236	1697.82	6.313	5.775	5.830	19.930	9.685	0.071	0.288	−0.051
160	238	1701.50	6.338	5.787	5.842	19.625	9.460	−0.004	0.283	−0.063
$Z = 80$ (Mercury)										
90	170	1311.45	5.240	5.254	5.315	−0.187	−0.162	0.004	−0.006	0.001
92	172	1333.42	5.272	5.270	5.330	−0.011	−0.011	0.001	−0.001	0.000
94	174	1353.46	5.305	5.283	5.343	−1.010	0.763	−0.001	−0.030	0.000
96	176	1372.95	5.335	5.293	5.353	−0.238	−0.185	−0.004	−0.007	−0.001
98	178	1393.30	5.379	5.317	5.376	−4.512	−3.477	0.045	−0.136	0.006
100	180	1413.69	5.424	5.345	5.405	−6.114	−4.718	0.102	−0.184	0.012
102	182	1434.32	5.461	5.363	5.422	−6.713	−5.084	0.108	−0.198	0.009
104	184	1453.08	5.494	5.380	5.439	−7.428	−5.525	0.121	−0.216	0.007
106	186	1471.08	5.523	5.392	5.451	−7.810	−5.680	0.116	−0.222	0.003
108	188	1488.33	5.547	5.398	5.457	−7.697	−5.448	0.082	−0.213	−0.006
110	190	1503.52	5.564	5.398	5.457	−7.294	−4.961	0.011	−0.197	−0.021
112	192	1520.03	5.582	5.397	5.456	−6.406	−4.180	−0.083	−0.169	−0.041
114	194	1536.40	5.605	5.405	5.464	−6.168	−3.937	−0.104	−0.159	−0.045
116	196	1552.30	5.628	5.413	5.471	−5.878	−3.671	−0.103	−0.146	−0.042
118	198	1567.75	5.649	5.420	5.478	−5.386	−3.301	−0.093	−0.129	−0.036
120	200	1582.55	5.670	5.426	5.484	−4.416	−2.694	−0.091	−0.102	−0.031
122	202	1596.86	5.693	5.431	5.490	−2.982	−1.812	−0.082	−0.067	−0.025
124	204	1610.79	5.717	5.436	5.495	−0.566	0.358	0.003	−0.012	0.001
126	206	1623.86	5.739	5.443	5.501	−0.278	−0.202	0.059	−0.006	0.001
128	208	1631.86	5.778	5.462	5.521	−0.463	−0.291	0.058	−0.009	0.001
130	210	1638.13	5.812	5.482	5.540	−0.885	−0.531	0.007	−0.018	0.002
132	212	1644.77	5.847	5.504	5.562	3.049	1.301	0.009	0.051	0.004
134	214	1650.83	5.875	5.522	5.580	1.003	0.538	−0.009	0.018	−0.002
136	216	1657.56	5.912	5.543	5.600	4.230	2.024	0.049	0.071	0.012
138	218	1663.95	5.949	5.562	5.619	6.075	2.776	0.088	0.097	0.020
140	220	1670.31	6.007	5.608	5.665	11.606	6.017	0.431	0.178	0.060
142	222	1677.62	6.052	5.643	5.699	14.250	7.536	0.521	0.214	0.061
144	224	1684.84	6.091	5.671	5.727	15.984	8.459	0.524	0.238	0.051
146	226	1691.79	6.126	5.694	5.750	17.119	8.990	0.484	0.253	0.038
148	228	1698.33	6.158	5.714	5.770	17.994	9.364	0.428	0.265	0.023
150	230	1704.42	6.190	5.733	5.789	18.718	9.646	0.365	0.274	0.008
152	232	1709.94	6.221	5.750	5.805	19.215	9.796	0.290	0.280	−0.008
154	234	1715.15	6.250	5.766	5.822	19.545	9.862	0.202	0.284	−0.025

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties

See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 80$ (Mercury)										
156	236	1720.19	6.278	5.782	5.837	19.671	9.833	0.113	0.285	−0.041
158	238	1725.02	6.304	5.796	5.851	19.558	9.694	0.031	0.282	−0.053
160	240	1729.42	6.330	5.808	5.863	19.349	9.527	−0.042	0.278	−0.065
162	242	1733.23	6.356	5.820	5.874	19.068	9.349	−0.112	0.272	−0.075
164	244	1736.67	6.381	5.830	5.884	18.649	9.124	−0.180	0.265	−0.085
$Z = 82$ (Lead)										
90	172	1309.82	5.244	5.278	5.338	−0.037	−0.026	0.001	−0.001	0.000
92	174	1332.75	5.277	5.292	5.352	−0.018	−0.013	−0.001	−0.001	0.000
94	176	1354.16	5.308	5.303	5.363	0.017	−0.007	−0.003	0.000	−0.001
96	178	1374.40	5.338	5.313	5.373	0.031	0.016	−0.006	0.001	−0.002
98	180	1394.17	5.367	5.322	5.382	0.120	0.068	−0.010	0.003	−0.003
100	182	1413.63	5.395	5.331	5.391	0.223	0.121	−0.014	0.005	−0.004
102	184	1432.77	5.422	5.340	5.400	0.295	0.158	−0.018	0.007	−0.005
104	186	1451.59	5.449	5.349	5.409	0.262	0.136	−0.024	0.006	−0.007
106	188	1470.15	5.476	5.359	5.418	0.685	0.355	−0.026	0.015	−0.007
108	190	1488.59	5.503	5.369	5.429	1.514	0.770	−0.018	0.033	−0.005
110	192	1506.84	5.530	5.380	5.439	1.890	0.941	−0.024	0.040	−0.007
112	194	1524.83	5.556	5.390	5.449	1.951	0.952	−0.038	0.040	−0.011
114	196	1542.49	5.581	5.399	5.458	1.271	0.605	−0.041	0.026	−0.011
116	198	1559.98	5.606	5.409	5.468	0.717	0.333	−0.034	0.014	−0.009
118	200	1577.23	5.632	5.420	5.478	0.368	0.166	−0.026	0.007	−0.007
120	202	1594.08	5.658	5.429	5.489	0.290	0.132	−0.019	0.006	−0.005
122	204	1610.47	5.684	5.439	5.497	0.143	0.066	−0.013	0.003	−0.003
124	206	1626.17	5.711	5.448	5.506	0.072	0.036	−0.009	0.001	−0.002
126	208	1640.16	5.733	5.456	5.513	0.002	0.001	−0.006	0.000	−0.001
128	210	1648.94	5.772	5.474	5.533	0.028	0.017	−0.007	0.001	−0.001
130	212	1655.90	5.805	5.493	5.551	0.047	0.025	−0.009	0.001	−0.002
132	214	1662.70	5.837	5.513	5.571	0.148	0.072	−0.011	0.003	−0.002
134	216	1669.54	5.868	5.533	5.590	0.193	0.089	−0.012	0.003	−0.002
136	218	1676.40	5.899	5.552	5.609	0.399	0.175	−0.012	0.007	−0.002
138	220	1683.25	5.930	5.570	5.627	0.307	0.131	−0.012	0.005	−0.002
140	222	1689.94	5.961	5.586	5.643	0.471	0.189	−0.010	0.007	−0.002
142	224	1696.97	6.024	5.630	5.687	10.951	5.142	0.480	0.157	0.068
144	226	1704.90	6.073	5.676	5.732	14.614	7.485	0.520	0.212	0.056
146	228	1712.21	6.104	5.693	5.749	15.427	7.709	0.491	0.221	0.047
148	230	1719.05	6.134	5.709	5.765	16.069	7.870	0.449	0.227	0.037
150	232	1725.38	6.162	5.724	5.779	16.539	7.966	0.399	0.232	0.025
152	234	1731.22	6.190	5.738	5.793	16.789	7.971	0.339	0.234	0.013
154	236	1736.76	6.218	5.752	5.807	16.894	7.923	0.272	0.234	0.000
156	238	1743.64	6.267	5.795	5.850	18.942	9.548	−0.014	0.274	−0.050
158	240	1749.27	6.293	5.809	5.864	18.919	9.466	−0.077	0.272	−0.061
160	242	1754.42	6.319	5.822	5.877	18.814	9.371	−0.137	0.269	−0.071
162	244	1758.98	6.345	5.835	5.889	18.638	9.264	−0.195	0.265	−0.080
164	246	1763.06	6.371	5.846	5.900	18.356	9.137	−0.247	0.260	−0.089
166	248	1766.84	6.398	5.856	5.910	17.980	8.990	−0.291	0.253	−0.096
168	250	1770.23	6.424	5.865	5.919	17.504	8.802	−0.322	0.245	−0.101
170	252	1772.98	6.445	5.873	5.927	16.578	8.430	−0.331	0.230	−0.098

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
$Z = 84$ (Polonium)										
100	184	1414.24	5.456	5.415	5.474	8.242	6.337	0.346	0.202	0.038
102	186	1435.59	5.489	5.433	5.491	9.023	6.893	0.285	0.220	0.020
104	188	1456.41	5.522	5.450	5.509	9.655	7.330	0.207	0.234	0.000
106	190	1476.35	5.529	5.441	5.499	−7.381	−5.626	0.060	−0.207	−0.010
108	192	1495.87	5.554	5.450	5.508	−7.433	−5.547	0.028	−0.205	−0.018
110	194	1514.79	5.578	5.457	5.515	−7.211	−5.289	−0.026	−0.196	−0.031
112	196	1533.32	5.601	5.465	5.523	−6.939	−5.013	−0.075	−0.186	−0.042
114	198	1551.43	5.623	5.472	5.530	−6.683	−4.750	−0.098	−0.175	−0.046
116	200	1568.10	5.626	5.456	5.514	3.881	2.305	−0.066	0.082	−0.021
118	202	1585.61	5.646	5.461	5.519	2.501	1.451	−0.047	0.052	−0.013
120	204	1603.01	5.670	5.468	5.526	0.933	0.533	−0.030	0.019	−0.007
122	206	1620.05	5.695	5.477	5.535	0.422	0.249	−0.020	0.009	−0.004
124	208	1636.47	5.721	5.486	5.544	0.090	0.057	−0.013	0.002	−0.003
126	210	1651.17	5.742	5.493	5.551	0.037	0.030	−0.009	0.001	−0.002
128	212	1660.99	5.780	5.513	5.570	0.079	0.056	−0.011	0.002	−0.002
130	214	1668.41	5.815	5.534	5.592	0.992	0.622	0.012	0.019	0.002
132	216	1677.09	5.844	5.553	5.610	0.777	0.468	−0.008	0.015	−0.001
134	218	1685.33	5.877	5.575	5.632	2.323	1.318	0.036	0.041	0.006
136	220	1693.33	5.909	5.594	5.651	3.168	1.711	0.052	0.054	0.009
138	222	1701.46	5.952	5.615	5.672	6.904	3.526	0.273	0.108	0.044
140	224	1709.64	5.996	5.646	5.703	10.397	5.426	0.482	0.155	0.066
142	226	1717.94	6.036	5.673	5.729	12.550	6.549	0.570	0.182	0.070
144	228	1726.04	6.071	5.696	5.752	14.078	7.300	0.587	0.201	0.065
146	230	1733.89	6.104	5.718	5.774	15.281	7.879	0.565	0.216	0.054
148	232	1741.33	6.136	5.738	5.793	16.248	8.338	0.512	0.229	0.040
150	234	1748.36	6.167	5.757	5.812	17.009	8.693	0.435	0.239	0.024
152	236	1754.95	6.197	5.773	5.829	17.427	8.839	0.334	0.245	0.007
154	238	1761.35	6.225	5.789	5.844	17.632	8.865	0.222	0.248	−0.011
156	240	1767.70	6.252	5.805	5.860	17.778	8.860	0.117	0.250	−0.028
158	242	1773.88	6.279	5.818	5.873	17.804	8.797	0.024	0.249	−0.043
160	244	1779.64	6.305	5.831	5.885	17.662	8.659	−0.058	0.246	−0.055
162	246	1784.82	6.330	5.842	5.896	17.346	8.452	−0.135	0.240	−0.066
164	248	1789.52	6.354	5.851	5.906	16.809	8.151	−0.198	0.232	−0.074
166	250	1793.88	6.376	5.857	5.911	15.813	7.621	−0.233	0.216	−0.077
168	252	1798.09	6.385	5.851	5.905	13.232	6.128	−0.171	0.175	−0.059
170	254	1802.70	6.401	5.849	5.904	11.217	5.029	−0.156	0.146	−0.051
172	256	1807.31	6.420	5.850	5.905	9.454	4.096	−0.169	0.120	−0.048
$Z = 86$ (Radon)										
104	190	1456.43	5.511	5.458	5.516	7.761	5.746	0.285	0.180	0.028
106	192	1477.55	5.535	5.466	5.524	7.661	5.545	0.219	0.176	0.017
108	194	1498.03	5.558	5.474	5.532	7.458	5.286	0.140	0.169	0.003
110	196	1517.86	5.581	5.481	5.539	7.164	4.986	0.061	0.161	−0.010
112	198	1536.93	5.601	5.486	5.544	6.584	4.492	0.003	0.146	−0.018
114	200	1555.27	5.619	5.486	5.544	5.399	3.583	−0.050	0.118	−0.023
116	202	1574.07	5.640	5.492	5.550	4.818	3.158	−0.066	0.104	−0.025
118	204	1592.12	5.658	5.492	5.550	−3.571	−2.321	−0.023	−0.080	−0.011
120	206	1609.98	5.681	5.499	5.557	−1.998	−1.322	−0.029	−0.043	−0.009

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 86$ (Radon)										
122	208	1627.34	5.704	5.510	5.567	1.002	0.674	−0.028	0.021	−0.006
124	210	1644.12	5.735	5.519	5.577	0.273	0.235	0.014	0.006	0.003
126	212	1659.70	5.753	5.523	5.581	0.042	0.039	−0.015	0.001	−0.002
128	214	1670.64	5.792	5.544	5.601	0.089	0.074	−0.019	0.002	−0.003
130	216	1679.94	5.824	5.564	5.621	0.301	0.223	−0.023	0.006	−0.004
132	218	1689.96	5.858	5.589	5.646	2.423	1.645	0.077	0.046	0.012
134	220	1699.56	5.891	5.610	5.667	3.563	2.275	0.101	0.064	0.015
136	222	1708.84	5.930	5.629	5.686	6.013	3.471	0.252	0.099	0.040
138	224	1718.35	5.972	5.654	5.710	9.212	5.092	0.513	0.139	0.073
140	226	1727.80	6.011	5.681	5.727	11.563	6.349	0.674	0.168	0.086
142	228	1736.99	6.049	5.706	5.762	13.400	7.346	0.752	0.191	0.086
144	230	1745.96	6.085	5.731	5.787	14.941	8.180	0.777	0.210	0.080
146	232	1754.66	6.117	5.753	5.809	16.047	8.729	0.730	0.224	0.066
148	234	1763.02	6.149	5.774	5.829	16.977	9.178	0.650	0.237	0.049
150	236	1770.92	6.179	5.791	5.846	17.601	9.420	0.544	0.246	0.031
152	238	1778.33	6.207	5.805	5.860	17.813	9.374	0.411	0.249	0.012
154	240	1785.52	6.232	5.817	5.872	17.712	9.121	0.273	0.247	−0.006
156	242	1792.62	6.258	5.829	5.884	17.581	8.873	0.150	0.244	−0.023
158	244	1799.50	6.284	5.841	5.895	17.449	8.661	0.043	0.241	−0.038
160	246	1806.03	6.309	5.852	5.906	17.186	8.411	−0.058	0.236	−0.052
162	248	1812.10	6.333	5.862	5.917	16.773	8.113	−0.148	0.229	−0.063
164	250	1817.63	6.357	5.871	5.925	16.055	7.680	−0.210	0.217	−0.070
166	252	1823.46	6.378	5.867	5.922	−13.936	−6.501	−0.074	−0.211	−0.043
168	254	1829.11	6.401	5.877	5.931	−13.447	−6.185	−0.111	−0.201	−0.049
170	256	1834.50	6.422	5.885	5.939	−12.615	−5.751	−0.159	−0.186	−0.056
172	258	1839.82	6.444	5.892	5.946	−11.646	−5.261	−0.199	−0.169	−0.061
174	260	1845.03	6.464	5.899	5.953	−10.584	−4.702	−0.205	−0.149	−0.059
176	262	1849.96	6.479	5.898	5.952	−8.494	−3.579	−0.156	−0.113	−0.043
$Z = 88$ (Radium)										
108	196	1498.45	5.568	5.504	5.562	7.617	5.597	0.135	0.173	0.001
110	198	1519.31	5.590	5.510	5.568	7.208	5.171	0.047	0.162	−0.013
112	200	1539.37	5.611	5.515	5.573	6.649	4.684	−0.024	0.148	−0.023
114	202	1559.05	5.632	5.521	5.579	6.020	4.183	−0.080	0.132	−0.030
116	204	1578.30	5.651	5.525	5.583	5.148	3.543	−0.107	0.112	−0.032
118	206	1597.09	5.670	5.529	5.587	4.073	2.797	−0.098	0.087	−0.026
120	208	1615.48	5.690	5.535	5.592	2.643	1.833	−0.070	0.056	−0.017
122	210	1633.47	5.713	5.542	5.599	1.429	1.023	0.043	0.030	−0.009
124	212	1651.01	5.737	5.550	5.607	0.351	0.269	−0.022	0.008	−0.004
126	214	1667.21	5.763	5.559	5.617	0.118	0.103	−0.016	0.003	−0.003
128	216	1679.14	5.794	5.576	5.633	0.210	0.175	−0.017	0.005	−0.003
130	218	1689.76	5.825	5.596	5.653	0.961	0.732	−0.010	0.020	−0.002
132	220	1700.90	5.858	5.619	5.676	2.781	1.961	0.053	0.053	0.008
134	222	1711.56	5.889	5.639	5.696	3.590	2.414	0.056	0.066	0.007
136	224	1721.48	5.919	5.658	5.714	3.926	2.543	0.030	0.070	0.003
138	226	1730.94	5.954	5.674	5.730	6.370	3.752	0.165	0.104	0.023
140	228	1740.98	6.000	5.700	5.756	11.017	6.289	0.608	0.163	0.074

(continued on next page)

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 88$ (Radium)										
142	230	1750.85	6.037	5.724	5.780	12.949	7.328	0.734	0.185	0.081
144	232	1760.39	6.071	5.746	5.802	14.398	8.064	0.765	0.202	0.076
146	234	1769.64	6.103	5.767	5.822	15.525	8.611	0.739	0.216	0.066
148	236	1781.09	6.150	5.803	5.857	17.402	9.882	0.768	0.242	0.055
150	238	1789.60	6.179	5.819	5.873	17.939	10.045	0.666	0.249	0.039
152	240	1797.53	6.205	5.830	5.885	17.999	9.859	0.531	0.249	0.021
154	242	1805.25	6.228	5.839	5.893	17.638	9.378	0.377	0.243	0.004
156	244	1812.87	6.251	5.847	5.902	17.261	8.909	0.232	0.236	−0.013
158	246	1820.31	6.275	5.856	5.910	16.919	8.504	0.102	0.230	−0.029
160	248	1827.48	6.299	5.865	5.919	16.444	8.069	−0.022	0.222	−0.043
162	250	1834.33	6.321	5.873	5.928	15.778	7.579	−0.125	0.212	−0.055
164	252	1840.80	6.341	5.879	5.934	14.540	6.821	−0.164	0.192	−0.055
166	254	1847.17	6.360	5.885	5.940	13.138	6.049	−0.176	0.171	−0.053
168	256	1853.41	6.382	5.892	5.946	11.993	5.471	−0.208	0.155	−0.055
170	258	1859.63	6.403	5.900	5.954	10.856	4.922	−0.242	0.139	−0.057
172	260	1865.75	6.426	5.906	5.960	9.703	4.374	−0.267	0.123	−0.058
174	262	1870.63	6.446	5.911	5.964	−8.402	−3.458	−0.103	−0.109	−0.030
176	264	1876.70	6.467	5.916	5.970	−6.590	−2.637	−0.093	−0.082	−0.024
178	266	1882.81	6.489	5.921	5.975	−3.803	−1.533	−0.068	−0.046	−0.016
180	268	1888.91	6.515	5.927	5.981	0.005	0.021	−0.001	0.000	0.000
182	270	1895.06	6.542	5.935	5.989	0.017	0.023	−0.003	0.000	0.000
$Z = 90$ (Thorium)										
112	202	1539.05	5.626	5.553	5.610	7.431	5.522	−0.014	0.165	−0.025
114	204	1560.06	5.642	5.553	5.610	6.062	4.332	−0.137	0.133	−0.039
116	206	1580.34	5.662	5.557	5.615	5.270	3.725	−0.166	0.114	−0.041
118	208	1600.03	5.680	5.560	5.618	4.011	2.826	−0.140	0.086	−0.032
120	210	1619.33	5.700	5.565	5.623	2.560	1.797	−0.091	0.054	−0.019
122	212	1638.14	5.722	5.572	5.629	1.111	0.781	−0.043	0.023	−0.008
124	214	1655.67	5.749	5.583	5.640	−0.946	−0.700	−0.001	−0.019	0.000
126	216	1673.21	5.765	5.586	5.643	0.060	0.058	−0.015	0.001	−0.002
128	218	1686.43	5.801	5.607	5.664	0.180	0.149	−0.019	0.004	−0.003
130	220	1698.18	5.832	5.626	5.683	0.600	0.452	−0.020	0.012	−0.003
132	222	1710.06	5.862	5.647	5.704	1.866	1.323	−0.005	0.036	−0.001
134	224	1721.82	5.892	5.668	5.724	2.643	1.809	−0.014	0.049	−0.003
136	226	1732.96	5.921	5.686	5.742	2.186	1.467	−0.041	0.040	−0.007
138	228	1742.62	5.972	5.713	5.769	10.339	6.514	0.646	0.158	0.076
140	230	1754.14	6.011	5.739	5.795	12.697	7.896	0.871	0.185	0.092
142	232	1764.99	6.045	5.760	5.815	14.119	8.599	0.926	0.201	0.091
144	234	1777.72	6.091	5.791	5.846	16.044	9.811	1.031	0.225	0.090
146	236	1787.93	6.122	5.812	5.867	17.035	10.272	0.965	0.237	0.075
148	238	1797.81	6.153	5.832	5.887	17.962	10.718	0.891	0.249	0.060
150	240	1806.93	6.181	5.848	5.902	18.516	10.897	0.803	0.255	0.046
152	242	1815.36	6.207	5.860	5.914	18.705	10.809	0.688	0.257	0.030
154	244	1823.46	6.230	5.869	5.923	18.407	10.367	0.543	0.252	0.014
156	246	1831.45	6.251	5.874	5.929	17.821	9.709	0.379	0.242	−0.002
158	248	1839.30	6.273	5.879	5.934	17.167	9.012	0.208	0.232	−0.019

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 90$ (Thorium)										
160	250	1847.04	6.293	5.884	5.938	16.266	8.202	0.026	0.218	−0.037
162	252	1854.69	6.314	5.891	5.945	15.214	7.396	−0.114	0.202	−0.049
164	254	1862.10	6.332	5.897	5.951	13.718	6.448	−0.165	0.179	−0.050
166	256	1869.33	6.353	5.905	5.958	12.527	5.769	−0.213	0.161	−0.053
168	258	1876.42	6.375	5.913	5.967	11.462	5.215	−0.260	0.146	−0.057
170	260	1883.43	6.397	5.921	5.974	10.418	4.710	−0.295	0.132	−0.059
172	262	1890.27	6.420	5.928	5.982	9.372	4.228	−0.312	0.117	−0.060
174	264	189635	6.442	5.934	5.988	7.798	3.461	−0.279	0.096	−0.052
176	266	1902.42	6.460	5.939	5.993	−4.531	−1.714	−0.042	−0.054	−0.010
178	268	1909.05	6.484	5.946	5.999	0.072	0.099	−0.002	0.001	0.000
180	270	1915.87	6.511	5.953	6.006	−0.040	0.054	−0.004	0.000	0.000
182	272	1922.36	6.537	5.961	6.014	0.031	−0.033	−0.002	0.000	0.000
$Z = 92$ (Uranium)										
116	208	1578.83	5.663	5.578	5.635	−2.806	−1.956	−0.008	−0.061	−0.005
118	210	1600.20	5.687	5.587	5.644	−2.453	−1.673	−0.015	−0.052	−0.005
120	212	1620.81	5.710	5.596	5.653	−1.770	−1.194	−0.022	−0.035	−0.005
122	214	1641.09	5.731	5.602	5.659	0.501	0.339	−0.033	0.010	−0.006
124	216	1660.13	5.754	5.610	5.667	0.187	0.136	−0.023	0.004	−0.004
126	218	1677.51	5.773	5.615	5.672	0.060	0.057	−0.016	0.001	−0.002
128	220	1688.46	5.815	5.644	5.700	−3.312	−2.355	0.037	−0.066	0.003
130	222	1704.82	5.838	5.655	5.712	0.323	0.236	−0.021	0.006	−0.003
132	224	1717.60	5.868	5.675	5.731	0.774	0.529	−0.021	0.014	−0.003
134	226	1728.81	5.903	5.700	5.756	3.084	2.065	0.035	0.055	0.004
136	228	1740.10	5.950	5.730	5.786	10.165	7.129	0.744	0.161	0.081
138	230	1753.42	5.987	5.755	5.810	12.414	8.469	0.965	0.187	0.097
140	232	1765.95	6.020	5.774	5.829	13.797	9.152	1.037	0.201	0.099
142	234	1780.04	6.064	5.802	5.857	15.528	10.165	1.164	0.220	0.102
144	236	1791.50	6.095	5.820	5.875	16.496	10.555	1.124	0.231	0.092
146	238	1802.53	6.125	5.838	5.893	17.398	10.931	1.052	0.242	0.078
148	240	1813.20	6.154	5.857	5.912	18.280	11.332	0.982	0.252	0.064
150	242	1822.95	6.183	5.873	5.927	18.854	11.525	0.904	0.259	0.051
152	244	1831.94	6.209	5.886	5.940	19.157	11.531	0.805	0.261	0.037
154	246	1840.48	6.233	5.897	5.951	19.082	11.268	0.684	0.259	0.023
156	248	1848.81	6.255	5.904	5.958	18.661	10.741	0.538	0.252	0.008
158	250	1856.92	6.276	5.909	5.963	18.044	10.059	0.367	0.242	−0.009
160	252	1864.89	6.294	5.911	5.965	16.838	8.962	0.131	0.225	−0.029
162	254	1872.95	6.312	5.915	5.969	15.440	7.847	−0.062	0.204	−0.043
164	256	1880.83	6.329	5.921	5.975	13.763	6.740	−0.130	0.179	−0.044
166	258	1888.51	6.349	5.929	5.982	12.503	5.972	−0.191	0.160	−0.048
168	260	1896.19	6.371	5.937	5.990	11.357	5.328	−0.243	0.144	−0.052
170	262	1903.66	6.392	5.943	5.997	9.960	4.552	−0.267	0.124	−0.052
172	264	1911.27	6.405	5.948	6.002	−5.785	−2.255	0.039	−0.069	0.004
174	266	1919.12	6.427	5.956	6.009	−4.375	−1.686	0.001	−0.052	−0.004
176	268	1926.58	6.453	5.964	6.017	−2.819	−1.073	−0.015	−0.033	−0.005
178	270	1933.84	6.480	5.971	6.024	−0.657	−0.291	−0.002	−0.008	−0.001
180	272	1940.95	6.506	5.978	6.031	−0.138	−0.109	−0.001	−0.004	−0.001

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 92$ (Uranium)										
182	274	1947.72	6.533	5.985	6.038	0.023	−0.054	−0.002	0.000	0.000
184	276	1953.38	6.560	5.994	6.047	−0.088	0.038	−0.005	0.000	0.000
186	278	1956.57	6.588	6.008	6.061	0.082	0.009	−0.001	0.001	0.000
188	280	1957.55	6.617	6.026	6.079	0.126	0.011	0.000	0.001	0.000
190	282	1958.38	6.645	6.046	6.099	0.146	0.014	0.001	0.001	0.000
192	284	1959.27	6.672	6.067	6.119	0.162	0.016	0.002	0.001	0.000
$Z = 94$ (Plutonium)										
120	214	1620.72	5.717	5.623	5.680	1.723	1.215	−0.019	0.035	−0.005
122	216	1640.56	5.739	5.633	5.690	−1.650	−1.205	−0.024	−0.034	−0.006
124	218	1660.11	5.762	5.641	5.697	−0.717	−0.563	−0.008	−0.015	−0.001
126	220	1678.61	5.779	5.644	5.700	0.041	0.044	−0.018	0.001	−0.003
128	222	1692.98	5.816	5.667	5.724	0.830	0.682	0.006	0.017	0.001
130	224	1706.78	5.848	5.688	5.744	1.823	1.398	0.049	0.035	0.007
132	226	1721.07	5.877	5.708	5.764	2.800	2.055	0.077	0.052	0.010
134	228	1734.86	5.906	5.727	5.783	3.084	2.193	0.051	0.055	0.005
136	230	1748.06	5.957	5.761	5.817	11.046	8.129	0.891	0.174	0.089
138	232	1762.58	5.994	5.785	5.840	13.068	9.334	1.053	0.197	0.098
140	234	1776.13	6.026	5.803	5.858	14.242	9.872	1.099	0.208	0.097
142	236	1789.02	6.056	5.820	5.875	15.363	10.359	1.110	0.220	0.093
144	238	1801.26	6.086	5.836	5.891	16.286	10.715	1.080	0.229	0.084
146	240	1812.97	6.114	5.852	5.907	17.087	10.987	1.025	0.238	0.073
148	242	1824.11	6.142	5.868	5.922	17.846	11.260	0.967	0.245	0.062
150	244	1834.35	6.168	5.881	5.936	18.305	11.361	0.897	0.250	0.051
152	246	1847.01	6.209	5.909	5.963	19.297	11.976	0.868	0.262	0.039
154	248	1856.23	6.233	5.920	5.974	19.310	11.789	0.758	0.261	0.026
156	250	1865.10	6.256	5.929	5.983	19.087	11.427	0.630	0.256	0.013
158	252	1873.69	6.278	5.937	5.991	18.760	10.981	0.485	0.251	−0.002
160	254	1881.99	6.297	5.941	5.995	17.854	10.134	0.281	0.238	−0.020
162	256	1890.28	6.135	5.945	5.998	16.482	9.001	0.071	0.218	−0.035
164	258	1898.41	6.330	5.949	6.003	14.701	7.771	−0.025	0.191	−0.037
166	260	1906.52	6.350	5.957	6.010	13.354	6.898	−0.102	0.172	−0.042
168	262	1914.40	6.369	5.963	6.017	11.888	5.969	−0.173	0.151	−0.045
170	264	1923.40	6.378	5.966	6.019	−8.195	−3.800	0.198	−0.103	0.022
172	266	1931.74	6.403	5.975	6.028	−7.693	−3.474	0.145	−0.095	0.013
174	268	1939.60	6.426	5.982	6.036	−6.333	−2.769	0.067	−0.077	0.003
176	270	1947.26	6.451	5.989	6.043	−4.799	−2.043	0.010	−0.057	−0.004
178	272	1954.57	6.476	5.996	6.049	−1.865	−0.810	−0.010	−0.022	−0.003
180	274	1961.96	6.502	6.003	6.056	−0.280	−0.179	−0.001	−0.004	0.000
182	276	1969.07	6.529	6.010	6.063	−0.024	−0.079	−0.002	−0.001	0.000
184	278	1975.93	6.553	6.018	6.071	0.062	0.003	−0.001	0.000	0.000
186	280	1978.93	6.582	6.033	6.086	0.197	0.006	−0.001	0.001	0.000
188	282	1980.50	6.610	6.052	6.105	0.236	0.037	0.000	0.002	0.000
190	284	1982.13	6.637	6.072	6.125	0.160	0.011	0.000	0.001	0.000
192	286	1983.73	6.663	6.094	6.146	0.144	−0.002	0.001	0.001	0.000

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
$Z = 96$ (Curium)										
120	216	1618.20	5.727	5.658	5.714	−4.111	−3.282	−0.050	−0.090	0.001
122	218	1638.76	5.746	5.663	5.719	−2.829	−2.279	−0.019	−0.061	−0.008
124	220	1658.57	5.767	5.669	5.725	−1.275	−1.077	−0.022	−0.027	−0.005
126	222	1677.11	5.785	5.673	5.729	−0.300	−0321	−0.006	−0.007	−0.001
128	224	1693.33	5.820	5.695	5.751	0.971	0.887	0.002	0.020	0.000
130	226	1708.70	5.851	5.716	5.772	2.567	2.176	0.107	0.050	0.013
132	228	1724.36	5.881	5.737	5.792	3.734	3.016	0.165	0.070	0.019
134	230	1739.08	5.909	5.755	5.810	3.913	3.054	0.116	0.071	0.011
136	232	1754.13	5.964	5.791	5.846	11.508	8.725	0.935	0.181	0.088
138	234	1769.52	5.998	5.812	5.867	13.202	9.715	1.059	0.199	0.094
140	236	1784.08	6.029	5.830	5.885	14.495	10.390	1.100	0.213	0.092
142	238	1797.96	6.059	5.847	5.901	15.558	10.860	1.109	0.224	0.087
144	240	1811.15	6.088	5.862	5.916	16.385	11.155	1.075	0.232	0.079
146	242	1823.82	6.116	5.877	5.932	17.208	11.440	1.028	0.240	0.069
148	244	1835.90	6.144	5.892	5.946	17.941	11.680	0.973	0.247	0.059
150	246	1846.89	6.169	5.905	5.959	18.369	11.757	0.903	0.251	0.049
152	248	1860.51	6.208	5.930	5.984	19.260	12.294	0.866	0.262	0.037
154	250	1870.40	6.231	5.942	5.995	19.232	12.079	0.753	0.260	0.024
156	252	1879.97	6.255	5.952	6.006	19.115	11.797	0.633	0.257	0.011
158	254	1889.19	6.279	5.962	6.015	18.993	11.505	0.505	0.254	−0.003
160	256	1898.07	6.300	5.969	6.023	18.518	10.994	0.346	0.246	−0.018
162	258	1906.71	6.319	5.975	6.028	17.623	10.242	0.187	0.233	−0.030
164	260	1915.02	6.334	5.979	6.033	15.987	9.091	0.094	0.209	−0.032
166	262	1923.20	6.351	5.985	6.038	14.315	7.952	0.000	0.185	−0.035
168	264	1931.23	6.368	5.989	6.042	12.304	6.560	−0.091	0.156	−0.037
170	266	1939.57	6.376	5.990	6.043	7.033	3.332	0.026	0.084	−0.005
172	268	1948.16	6.397	5.999	6.052	4.834	2.222	0.027	0.057	−0.001
174	270	1956.59	6.423	6.007	6.060	3.731	1.717	0.020	0.044	0.000
176	272	1966.20	6.451	6.017	6.070	−7.149	−3.484	0.068	−0.088	−0.002
178	274	1973.17	6.475	6.022	6.075	−4.398	−2.051	0.001	−0.052	−0.005
180	276	1980.53	6.499	6.026	6.079	0.176	0.176	−0.003	0.003	0.000
182	278	1987.99	6.525	6.033	6.086	0.012	0.099	−0.005	0.001	0.000
184	280	1995.42	6.548	6.041	6.094	−0.012	0.037	−0.005	0.000	0.000
186	282	1999.05	6.576	6.057	6.109	−0.005	0.043	−0.004	0.000	0.000
188	284	2001.40	6.603	6.077	6.129	0.042	−0.005	0.003	0.000	0.000
190	286	2003.47	6.630	6.098	6.151	0.499	0.062	−0.001	0.005	0.000
192	288	2006.75	6.660	6.123	6.175	5.223	2.745	0.235	0.056	0.025
194	290	2010.43	6.701	6.140	6.192	11.191	5.263	0.755	0.104	0.079
196	292	2013.63	6.734	6.162	6.213	14.499	6.776	0.994	0.130	0.095
$Z = 98$ (Californium)										
128	226	1691.78	5.827	5.725	5.781	2.004	1.958	0.074	0.042	0.008
130	228	1709.53	5.861	5.749	5.805	4.269	3.873	0.303	0.082	0.032
132	230	1726.28	5.890	5.767	5.823	5.123	4.444	0.329	0.095	0.034
134	232	1741.86	5.918	5.782	5.839	5.704	4.755	0.321	0.102	0.031
136	234	1758.42	5.968	5.816	5.871	11.425	8.862	0.914	0.180	0.082
138	236	1774.64	6.002	5.837	5.892	13.192	9.936	1.012	0.200	0.086
140	238	1789.95	6.032	5.854	5.908	14.311	10.497	1.044	0.212	0.084

(continued on next page)

TABLE I. RMF Predictions of Ground-State Properties
See page 10 for Explanation of Table

N	A	BE(MeV)	r_n(fm)	r_p(fm)	r_c(fm)	Q_n(b)	Q_p(b)	H_p(b^2)	β_2	β_4
(continued from previous page)										
$Z = 98$ (Californium)										
142	240	1804.64	6.061	5.869	5.924	15.288	10.928	1.039	0.221	0.079
144	242	1818.74	6.089	5.884	5.939	16.133	11.256	1.003	0.230	0.070
146	244	1832.32	6.117	5.900	5.954	17.024	11.598	0.959	0.239	0.061
148	246	1845.30	6.144	5.914	5.968	17.795	11.871	0.908	0.246	0.052
150	248	1857.17	6.169	5.927	5.980	18.162	11.909	0.834	0.249	0.042
152	250	1868.32	6.192	5.938	5.991	18.230	11.769	0.737	0.248	0.030
154	252	1882.74	6.230	5.963	6.016	18.985	12.227	0.674	0.257	0.017
156	254	1893.16	6.254	5.974	6.254	18.995	12.037	0.563	0.256	0.005
158	256	1903.14	6.279	5.985	6.038	19.042	11.874	0.446	0.255	−0.009
160	258	1912.76	6.301	5.995	6.048	18.881	11.601	0.320	0.252	−0.022
162	260	1921.96	6.322	6.003	6.056	18.403	11.159	0.206	0.244	−0.032
164	262	1930.58	6.340	6.009	6.062	17.219	10.326	0.145	0.226	−0.033
166	264	1938.99	6.355	6.013	6.066	15.501	9.169	0.080	0.201	−0.032
168	266	1947.24	6.370	6.016	6.069	13.391	7.670	−0.021	0.171	−0.035
170	268	1955.86	6.380	6.017	6.069	9.061	4.768	0.025	0.111	−0.013
172	270	1966.20	6.409	6.029	6.082	−10.485	−5.446	0.229	−0.134	0.019
174	272	1974.73	6.430	6.036	6.089	−9.258	−4.761	0.145	−0.117	0.008
176	274	1982.95	6.452	6.042	6.094	−7.961	−4.036	0.053	−0.099	−0.004
178	276	1989.95	6.471	6.046	6.098	2.420	1.315	0.005	0.029	−0.001
180	278	1997.95	6.495	6.050	6.103	0.875	0.599	−0.006	0.011	−0.001
182	280	2005.74	6.522	6.058	6.111	−0.011	−0.087	0.003	−0.001	0.001
184	282	2013.66	6.543	6.059	6.118	0.023	0.015	0.002	0.001	0.000
186	284	2017.89	6.570	6.082	6.134	0.036	−0.003	0.002	0.000	0.000
188	286	2020.89	6.598	6.102	6.154	−0.028	−0.089	0.001	−0.001	0.000
190	288	2024.90	6.627	6.128	6.180	5.087	3.121	0.299	0.057	0.028
192	290	2029.79	6.667	6.148	6.199	10.336	5.590	0.823	0.101	0.079
194	292	2034.00	6.699	6.168	6.220	12.996	6.742	1.011	0.121	0.092
196	294	2038.20	6.731	6.191	6.243	15.914	8.038	1.214	0.142	0.104
198	296	2042.42	6.766	6.216	6.268	19.033	9.442	1.422	0.165	0.113