where $\beta = 0, 1, 2, \ldots$.

For given f the desired solution of (2) has the form

$$\chi_{fklm}(r, \theta, \varphi, r_0) = g_{klm}(r, \theta, \varphi)\, \Phi_{(f-k-1)/2}(r_0)$$

and is degenerate with multiplicity $(\beta+1)(\beta+2)(\beta+3)/6$. The obtained solutions make it possible to classify all states according to their mass, internal angular momentum and "internal time number" k . Thus, for $f = 4$ we have the lowest nondegenerate state, in which $k = 3$ (corresponding to $n_0 = 0$) and the angular momentum $l = 0$. For $f = 6$, we have two states with different spins; in the first $k = 3$, $l = 0$ and in the second $k = 5$, $l = 1$. For $f = 8$, for example, we have in addition to states $k = 3$, $l = 0$ and $k = 5$, $l = 1$ also the states for $k = 7$ with angular momenta $l = 0$ and $l = 2$.

The considerations presented have, finally, an illustrative character and lie in the direction of attempts[2,3] to introduce spin in a natural way in a theory with a mass spectrum.

In conclusion we express our gratitude for his guidance to Prof. M. A. Markov.

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Further Discussion on the Quantum Theory of the Radiating Electron

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NELIP[1] has made a series of critical remarks in his reply to our work on the quantum theory of the radiating electron. However, these critical remarks are based on a modification of our Eq. 18[2] which is given by Nelip[1] in the form

$$\varepsilon = (1 - \beta^2 \sin^2 \vartheta)\left(1 + \frac{\nu}{2n}\right) + O\left(\frac{\nu^2}{n^2}, \frac{\nu^3}{n^3} \cdots\right), \qquad \text{(A)}$$

(cf. Eq. A, p. 423 of Ref. 1). As a matter of fact, this formula has the form

$$\varepsilon = (1 - \beta^2 \sin^2 \vartheta)(1 + \nu/2n). \qquad \text{(B)}$$

(cf. Eq. (18) of Ref. 2).

In connection with this formula we made an observation that the higher order terms of $(\frac{\nu}{n})^2$ of the expansion should also have the small multiplier $(1 - \beta^2 \sin^2 \vartheta)$. Therefore the expression (A) has the form

$$\varepsilon = (1 - \beta^2 \sin^2 \vartheta)\left(1 + \frac{\nu}{2n}\right) + \left(1 - \beta^2 \sin^2 \vartheta\right) O\left(\frac{\nu^2}{n^2}, \frac{\nu^3}{n^3} \cdots\right), \qquad \text{(C)}$$

which was indeed used by us in our previous work[2] and also in our following articles on the quantum theory of the radiating electron (cf., for example, Eq. (43) of Ref. 3).

Furthermore, Nelip[1] ascribes to us still a second inaccurate formula (B) (p. 423) which does not follow in any way out of our Eqs. (16) and (18) of Ref. 2. Therefore the critical remarks that our method developed in Ref. 2 has a small region of applicability by its limitation to the magnitudes $\nu^3/n^2 \ll 1$ appear to be a misunderstanding as they are based on the modification pointed out above. From our original Eq. (18)[2] it follows that the terms discarded by us are of the order $(\nu/n)^2$.

Therefore we cannot accept the criticism made by Nelip and our previous observations should remain valid.[4,5]

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