

$T_3 + \frac{3}{2}$ is the charge of the nucleus, φ the orbital part of the ground state eigenfunction, $z^{AB} = z^A - z^B$, $r_{AB} = |z^{AB}|$, $(f\mu)$ the dimensionless coupling constant of the meson field: $(f\mu)^2 \cong \frac{1}{10}$, and $\mu = Mc/\hbar$. A rough evaluation of $M^{(1)}$ has been made with the help of gauss functions $\varphi \sim \exp(-\alpha r^2)$, $r^2 = \frac{1}{2}(r_{12}^2 + r_{13}^2 + r_{23}^2)$, with the following result (J is the volume integral in M).

μ^2/α	1.0	1.5	2.0	2.5	0.75
J	-0.14	-0.21	-0.23	-0.23	-0.058
M	+0.18	+0.28	+0.31	+0.31	+0.077

Thus, with reasonable values of γ , $(f\mu)$, and μ^2/α we obtain both the right sign and right order of magnitude of the correction to be added.

It should be noted that for He^3 the correction is equal in magnitude but opposite in sign. We would, therefore, expect for He^3 a total magnetic moment $\mu \cong \mu(N) - M \cong -2.1$ n.m. Experimental evidence would be very interesting.

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² R. G. Sachs and J. Schwinger, Phys. Rev. **70**, 41 (1946).

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Errata: Theory of Dipole Interaction in Crystals

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J. M. LUTTINGER AND LASZO TISZA

Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, Massachusetts

SEVERAL misprints have been noticed in the above paper. These are the following:

P. 956, line 7 should read $p_x^\nu, p_y^\nu, p_z^\nu, \nu = 1, \dots, 8$.

P. 956, Eq. 7 should read

$$U = -\frac{1}{16} \sum_{\mu, \nu=1}^8 \sum_{xy} F_{\mu\nu} x^\mu p_x^\nu p_y^\nu. \quad (7)$$

P. 957, Eq. 12 should read

$$Z_i = (-)^{\alpha i l_1 + \beta i l_2 + \gamma i l_3} \quad i = 1, \dots, 8. \quad (12)$$

P. 960, last equation. The denominator should be raised to the 5/2 power.

P. 960, Table II, first line should read

$$f_2 = -\frac{1}{2}[S_z(0, \frac{1}{2}, \frac{1}{2}) - S_z(\frac{1}{2}, 0, 0)].$$

P. 960. The small table under Table II contains several inversions and a sign error. It is correctly given by:

$$\begin{aligned} S_z(\frac{1}{2}, 0, 0) &= -15.040 & S_y(0, \frac{1}{4}, \frac{1}{4}) &= 31.521 \\ S_z(0, \frac{1}{2}, \frac{1}{2}) &= 4.334 & S_y(\frac{1}{2}, \frac{1}{4}, \frac{1}{4}) &= 2.599 \\ S_y(\frac{1}{4}, \frac{1}{4}, \frac{1}{4}) &= 10.620 & S_z(0, \frac{1}{4}, \frac{1}{4}) &= 12.329 \end{aligned}$$

Lastly, in Table V, p. 963, lines 4 and 5 should be exchanged (which moves a minus sign down one line), and line 12 should read $-2\mathbf{X}_8 - \mathbf{Y}_8 + \mathbf{Z}_8$.

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Burst Production by Penetrating Cosmic-Ray Particles*

HERBERT BRIDGE, BRUNO ROSSI, AND ROBERT WILLIAMS

Laboratory for Nuclear Science and Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts

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AN ARRAY of Geiger-Mueller tubes, G , and an ionization chamber, C , were arranged, respectively, above and below a lead block 6 in. thick, as shown in Fig. 1. The

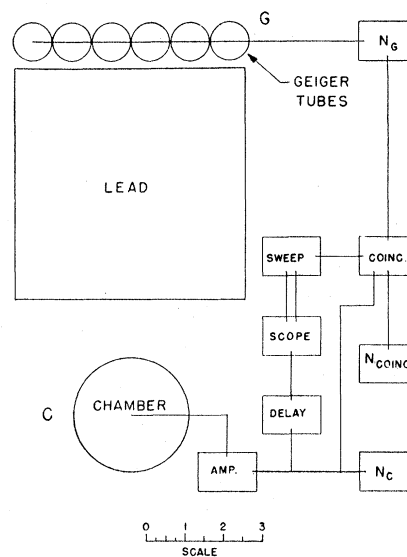


FIG. 1. Schematic arrangement of equipment.

Geiger-Mueller tubes were connected in parallel. Each was 1 in. in diameter and 20 in. long. The chamber was cylindrical in shape, 3 in. in diameter, 20 in. long, and was filled to 7.3 atmospheres with highly purified argon so that "fast" electron pulses would be recorded quantitatively. The pulses of the ion chamber were applied to the vertical deflecting plates of a cathode-ray oscilloscope through a linear amplifier and a delay line. The oscilloscope was provided with a fast horizontal sweep (5 microseconds per inch) which was triggered by the coincidences between the (undelayed) pulses of the ionization chamber and the pulses of the Geiger-Mueller tubes. The oscilloscope screen was photographed on a moving film. The individual counting rates of the chamber (N_c) and of the Geiger-Mueller tubes (N_g) were also recorded.

A polonium source of α -particles was placed on the wall of the chamber for the purpose of calibration. The resolving time ($\tau_1 + \tau_2$) for the selection of coincident pulses was determined both by direct observation of the pulses on the oscilloscope screen and by counting chance coincidences between pulses in the Geiger-Mueller tubes and α -particle pulses in the ionization chamber. Its value was found to be 50 microseconds.

For the main experiments, the circuits were adjusted so as to record only pulses greater than 1.1 times a Po