sults as far as the calculation of $\tilde{\alpha}$. If a correction is made for the counting of evaporated neutrons in the way which we have used for calcium, then $\tilde{\alpha}$ from all these experiments has roughly the same value, near to unity, with the same (about 35%) statistical error. However, the lower neutron counting threshold (3 — 5 Mev) in these experiments leads to appreciable corrections P_n (0.5 — 0.7), making the value of $\tilde{\alpha}$ derived from [4] and [5] less reliable.

The existence of asymmetry of neutron emission which we have observed confirms the parity nonconservation in μ^- capture.[4,5]

On the basis of the theoretical[1] and measured values of $\tilde{\alpha}$, the presence of a pseudoscalar component of the interaction in process (1) can be deduced, with the sign of the ratio g_P/g_A of the pseudoscalar and pseudovector constants positive.

We must point out that the value of $\tilde{\alpha}$ obtained is appreciably greater than the most probable theoretical value $\tilde{\alpha} = 0.41$, obtained for $g_A/g_V = -1.25$, $g_P/g_A = 8$, $g_T/g_V = 3.7$.[1]

The authors consider it a pleasant duty to thank I. S. Shapiro, É. I. Dolinskii, and L. D. Blokhintsev for discussing the results of the present experiments, and Chang Jun-wa for help with the experiments.

---

[1] É. I. Dolinskii and L. D. Blokhintsev, JETP **35**, 1488 (1958), Soviet Phys. JETP **8**, 1040 (1959); Akimova, Blokhintsev, and Dolinskii, JETP **39**, 1806 (1960), Soviet Phys. JETP **12**, 1260 (1961).

[2] Evseev, Komarov, Kush, Roganov, Chernogorova, and Shimchak, Prib. i. Tekhn. Eksper. (Instrum. and Exptl. Techniques) No. 1, 68 (1961), Acta Phys. Polonica **19**, 675 (1960).

[3] Ignatenko, Egorov, Khalupa, and Chultém, JETP **35**, 1131 (1958), Soviet Phys. JETP **8**, 792 (1959).

[4] Astbury, Blair, Hussain, Kemp, Muirhead, and Voss, Phys. Rev. Lett. **3**, 476 (1959).

[5] W. L. Telegdi, Proc. Int. Conf. on High Energy Physics, Rochester, 1960.

Translated by R. Berman
61

CORRECTION TO "THE RELATIONSHIP BETWEEN MATRICES OF DIFFERENT TRANSITIONS AND MULTIPLE PROCESSES"

B. T. VAVILOV

Moscow State University

Submitted to JETP editor February 25, 1961

J. Exptl. Theoret. Phys. **41**, 307-308 (July, 1961)

OUR earlier calculation[1] of multiplicity requires the following corrections.

1. Propagation functions in the Bloch-Nordsieck model were replaced incorrectly by $i(2\pi)^{-4}E_p^{-1}$. This approximation was based on the fact that

$$\prod_{i=1}^{n} S^c\Big(p_f + \sum_{\alpha=1}^{i} k_\alpha\Big) \sim E^{-n}$$

for $|\mathbf{k}_\alpha| \to 0$. Since this approximation is invalid for large $|\mathbf{k}_\alpha|$ the initial system of equations was solved anew for $V^{0n,22}$ [see Eqs. (9) and (10) in [1]], using a procedure proposed previously.[1,2] In the center-of-mass system we then obtain, instead of Eq. (15) of [1],

$$Q_n = \frac{g^{n+2} m^n \alpha_n(g, E)}{(n!)^{1/2} E_p^n} \prod_{i=1}^{n} \omega_i \Big/ \prod_{i=1}^{n} (\omega_i^2 - \mathbf{k}_i^2 \cos^2 \theta_i), \tag{1}$$

where E_p and ω_i are the energy of the nucleon and of the i-th meson in the final state, $\mathbf{k}_i^2 = \omega_i^2 - \mu^2$, and α_n is a function slightly dependent on n and E.

2. It is also necessary to perform a new integration over the final states. This had been done inconsistently in [1] and [2]. When we drop the hypothesis that the mesons are monoenergetic,[1] we must calculate

$$W_n = \int \frac{d^3p_1}{2E_{p_1}} \frac{d^3p_2}{2E_{p_2}} \frac{d^3k_1 \ldots d^3k_n}{2\omega_1 \ldots 2\omega_n} Q_n^2 \cdot \delta^4\Big(q_1 + q_2 - p_1 - p_2 - \sum_{i=1}^{n} k_i\Big), \tag{2}$$

where Q_n is given by (1); a factor ensuring correct normalization of the final state[3] is taken into account in Q_n. Using a procedure similar to that proposed in [4] and [5], we can express W_n in terms of Hankel functions. However, multiplicity cannot be calculated for the general case. It must be assumed that the total momentum of the mesons is zero and that the transverse momentum of each meson is conserved ($p_\perp \sim \mu$). We then obtain approximately

$$W_n = (2\pi g m e^4 \mu^{-2})^n E^{2n} n^{-5n}, \tag{3}$$

whence for the most probable number of created mesons in the c.m. system we have

$$\bar{n} = [\pi g m / 1{,}4 \mu^2]^{2/5} E^{2/5}.$$

---

[1] B. T. Vavilov and V. I. Grigor'ev, JETP **39**, 794 (1960), Soviet Phys. JETP **12**, 554 (1961).

[2] B. T. Vavilov, Vestnik Moscow State University **6**, 47 (1960).

[3] N. N. Bogolyubov and D. V. Shirkov, Introduction to the Theory of Quantized Fields, Interscience Publ., New York, 1959.

[4] J. V. Lepore and R. N. Stuart, Phys. Rev. **93** [sic!] 1434 (1954); **94**, 1724 (1954).

[5] K. Kobayakawa and T. Imamura, Progr. Theoret. Phys. (Kyoto) **23**, 137 (1960).

Translated by I. Emin
62

Contents of Coming Issues

SOVIET PHYSICS JETP VOLUME 14, NUMBER 2 FEBRUARY, 1962

Russian Reference