

on the vector mesons, one has to show how to incorporate the baryon-number current in a consistent way.<sup>12</sup>

<sup>12</sup> The authors of Ref. 6 present an alternative way of breaking the symmetry. They add to Sugawara's symmetric energy-momentum tensor terms formed with scalar and pseudoscalar densities (essentially the nonderivative terms in the  $\sigma$  model). This way of breaking the symmetry has, compared with Sugawara's, the advantage of keeping the current commutators covariant. Further-

The author is thankful to Professor Sakurai for drawing his attention to the  $\omega$ - $\varphi$  mixing problem in Sugawara's theory and for very illuminating discussions. Conversations with Professor Nambu are also gratefully acknowledged.

more,  $\eta_8/\eta_3=1$  and Eq. (17) is unambiguous, but the other problems described in the present note will also be encountered if one tries to apply this model to the nine vector mesons.

## Errata

**Large-Angle Proton-Proton Scattering and the Pomeranchuk Trajectory**, K. HUANG AND S. PINSKY [Phys. Rev. **174**, 1915 (1968)]. (1) In Eq. (77) and in Table III, all  $m$  should be replaced by  $m^2$ , and all  $t$  should be replaced by  $-t$ . (2) The values of  $K_1$ ,  $K_2$ , and  $K_3$  given in Eq. (79) should be corrected to read  $K_1=4.17$ ,  $K_2=0.0985$ , and  $K_3=0.0216$ .

**Four-Body Leptonic Decays of Hyperons**, Y. SINGH [Phys. Rev. **161**, 1497 (1967)]. In Eq. (4),  $d$  and  $f$  should be interchanged. In Eq. (A1), the factor  $\eta_1 d^3 P_1 / (2\pi)^2 2E_1$  should be replaced by  $\eta_1 d^3 P_1 / (2\pi)^2 2E_1$ . The last term in the expression for  $\bar{F}$ , given below Eq. (A4), should have  $[2(p_2 \cdot N)^2 + m_2^2 N^2]$  instead of  $[2(p_2 \cdot N)^2 - m_2^2 N^2]$ . In Table I,

the contributions from the equal-time commutator (ETC) to the coefficients of  $\gamma_\alpha$  and  $\gamma_\alpha \gamma_5$  should be interchanged, and the contribution from  $(-i)f_\pi B_\alpha^{(2)}(p_2)$  to the coefficient of  $\gamma_\alpha(\gamma \cdot p_2)\gamma_5$  should have an over-all minus sign.

The values of the decay rates given in Table II are somewhat modified. The new values are given in Table II (revised) below. In the revised table we show also the contribution from the ETC to the decay rate. The results for different values of  $g_A^{n \rightarrow p}$  will be reported elsewhere [Y. Singh, Ph.D. thesis, Bombay University,<sup>1</sup> 1969 (unpublished)].

I would like to thank Dr. N. Brene, Dr. A. B. Kraemmer, and Dr. T. Vilhjalmsjon for pointing out these errors.

TABLE II (revised). Calculated four-body leptonic decay rates of hyperons (for  $g_A^{n \rightarrow p}=1.18$ , and Cabibbo angle  $\theta_V=\theta_A=0.23$ ).

Decay mode	Decay rate $\Gamma_{B \rightarrow B' + \pi + e^- + \bar{\nu}_e}$ ( $\text{sec}^{-1}$ )			Contribution from ETC ( $\text{sec}^{-1}$ )	Experimental total decay rate ( $\text{sec}^{-1}$ )
	$d/f=1.68$	$d/f=1.95$	$d/f=2.28$	$d/f=1.95$	
$\Lambda \rightarrow p + \pi^0 + e^- + \bar{\nu}_e$	0.45	0.43	0.41	0.49	$3.97 \times 10^9$
$\Lambda \rightarrow n + \pi^+ + e^- + \bar{\nu}_e$	0.34	0.32	0.31	0.37	
$\Sigma^+ \rightarrow p + \pi^+ + e^- + \bar{\nu}_e$	$3.21 \times 10^2$	$3.66 \times 10^2$	$4.18 \times 10^2$	$2.30 \times 10^2$	$1.23 \times 10^{10}$
$\Sigma^- \rightarrow n + \pi^0 + e^- + \bar{\nu}_e$	$1.64 \times 10^2$	$1.88 \times 10^2$	$2.20 \times 10^2$	$2.11 \times 10^2$	
$\Sigma^- \rightarrow p + \pi^- + e^- + \bar{\nu}_e$	$1.83 \times 10^2$	$1.89 \times 10^2$	$1.98 \times 10^2$	0.0	$6.10 \times 10^9$
$\Xi^0 \rightarrow \Lambda + \pi^+ + e^- + \bar{\nu}_e$	$0.63 \times 10^1$	$0.64 \times 10^1$	$0.65 \times 10^1$	$0.44 \times 10^1$	
$\Xi^- \rightarrow \Lambda + \pi^0 + e^- + \bar{\nu}_e$	$1.08 \times 10^1$	$1.09 \times 10^1$	$1.12 \times 10^1$	$0.66 \times 10^1$	$6.02 \times 10^9$

**Kinematic Singularities and Constraints of Helicity Amplitudes**,\* T. L. TRUEMAN [Phys. Rev. **173**, 1684 (1968)]. In Eqs. (2.14), (2.21), (3.5), (3.8), and (4.5) the sign of the argument of the exponential function must be reversed; e.g., in Eq. (2.14),

\* Work performed under the auspices of U. S. Atomic Energy Commission.

replace  $e^{i(\pi/2)\mu}$  by  $e^{-i(\pi/2)\mu}$ . Correspondingly, the parity conditions, Eqs. (2.15), (2.22), and (4.6), must be multiplied by  $(-1)^{2J}$  on the right-hand side. These changes all result from the omission of a phase factor in the Clebsch-Gordan series for combining the  $d$ 's. I would like to thank Dr. A. D. Martin for calling this error to my attention.