## Answer to "Comments on 'Duality and Nonleptonic Hyperon Decay'"

Shmuel Nussinov\*

Physics Department, Tel Aviv University, Ramat Aviv, Israel

AND

JONATHAN L. ROSNER†

School of Physics and Astronomy, University of Minnesota, Minneapolis, Minnesota 55455

(Received 10 June 1970)

A recent result on duality in nonleptonic hyperon decay is clarified.

THE point at issue<sup>1</sup> is to what extent small errors in estimates of pole terms affect S- and P-wave nonleptonic hyperon decays. One does not need current algebra or partial conservation of axial-vector current to compare the processes  $KB \to \pi B$  and  $\kappa B \to \pi B$ , which are the respective hadronic analogs of these

processes. In the former, the pole terms do play a much smaller role than in the latter, and one can check the magnitude of such pole terms in the former by looking at a host of observed amplitudes. Our claim was that duality is much more likely to work well when local fluctuations are a small part of the total amplitude. It is not that pole terms can be neglected completely in S-wave decays.

\* Work supported in part by the U. S. Air Force under Grant No. EOOAR-68-0010 through the European Office of Aerospace Research.

† Work supported in part by the U. S. Atomic Energy Commission under Contract No. AT(11-1)-1764.

<sup>1</sup> See S. Pakvasa, preceding paper, Phys. Rev. D 2, 1353 (1970).

The mass differences for  $\frac{1}{2}$ <sup>+</sup> Born terms arise in our work *without* assuming derivative couplings. We know of no other accepted form than derivative couplings for the  $\frac{3}{2}$ <sup>+</sup> Born terms.

## Errata

Production of Single W Mesons in Electron-Positron Colliding Beams and in Electron or Muon Scattering Experiments, F. A. Berends and Geoffrey B. West [Phys. Rev. D 1, 122 (1970)]. (1) Equation (20): The factor  $G_{W}\alpha/p_{1}m$  should read  $(G_{W}\alpha/p_{1}m)^{2}$ ; B should read -B and C should be replaced by

$$C = M^2(S - m^2)^2/E^2$$
.

(2) In the Appendix the first term in  $\beta_2$  should read

$$(2/a_1)K^2(m^2-M_{W^2})$$
.

We would like to thank Dr. A. Zepeda for bringing these misprints to our attention.

Finite-Energy Sum Rules and the Process 0<sup>-</sup>+0<sup>-</sup> → 0<sup>-</sup>+0<sup>-</sup>, Christoph Schmid and Joel Yellin [Phys. Rev. 182, 1449 (1969)]. There are three misprints in Sec. III which should be corrected as follows:

Equation (3.6) should read

$$D_{abs}D_{cds} + D_{ads}D_{bcs} - \lambda_1 D_{cas}D_{bds} + \xi_1 (F_{abs}F_{cds} - F_{ads}F_{bcs}) = 0.$$

Equation (3.10) should read

$$\lambda_1 = 2$$
.

In Ref. 17 read "(d)" for "(c)".