generates an algebra isomorphic to the algebra of $E(2)\otimes D$, where $E(2)$ is the group of Euclidean motions in a plane, and D is a one-parameter boost in the z direction.

It is also possible to show that if one requires initially that this algebra is satisfied, then a necessary condition is that M_3 vanishes, provided one uses (3.1) and (3.2) which result from the case when k^2 is zero. First, we observe that (4.1) used with (3.2) and K written in the form

$$K=\tfrac{1}{8}[(\Lambda_-)_+ + (\Lambda_+)_-] \quad (4.3)$$

implies

$$X_+=\tfrac{1}{8}(\Lambda_-)_{++}. \quad (4.4)$$

This result together with the equation found by applying $\delta(X_+)$ to (3.4) gives

$$B_1=0. \quad (4.5)$$

Next we show that this result requires M_3 to vanish. To do this, we apply the commutation operation $\delta^2(X_+)\delta^2(X_-)$ to (3.6) and use (4.4) and its Hermitian adjoint to show that

$$[M_{3(1)},M_{3(-1)}]=0. \quad (4.6)$$

Upon multiplying this equation by $M_{3(1)}$ and using the property that $M_{3(1)}{}^2$ vanishes, one concludes that

$$(M_3)^3=0. \quad (4.7)$$

But since M_3 is an anti-Hermitian operator, one obtains the desired result.

In addition, if the condition (3.48a) is strengthened to the three separate conditions

$$B=0 \quad (4.8a)$$

$$=\pm\tfrac{1}{2}(R+1), \quad (4.8b)$$

and if one accepts the results of the case when k^2 vanishes, then it is easily seen that the conditions (4.8) require M_3 to vanish and therefore the preservation of the $E(2)\otimes D$ structure. The case $B=0$ is trivial since in this case B_+ is obviously zero, and we have already seen that this is sufficient to show that M_3 vanishes. For the case (4.8b), one finds

$$B_\pm=\mp M_{3(\pm1)} \quad (4.9)$$

so that (3.1) gives

$$B_2=0. \quad (4.10)$$

However, we have already seen in Sec. III that this is sufficient to prove that M_3 vanishes.

V. REVIEW OF SOLUTIONS

The mass spectra representing the solutions of the isospin-factored current algebra have been presented elsewhere,[1] and the details for the construction of the solutions can be found there; however, for completeness, a review of the results is presented here. In order to obtain solutions which are consistent with the k-independent equation (3.48), one finds solutions of the Hilbert spaces $\mathcal{H}_0$ and $\mathcal{H}_\pm$ which form a basis for the mass operator corresponding to the cases in (4.8). It can be shown that a general solution can be obtained by a suitable coupling of the solution for the three separate Hilbert spaces.

For each of the values of B, it is possible with a suitable redefinition of the basic operators $X_\pm$, K, $\mathbf{J}$, and $\mathfrak{F}_\pm$ to generate an algebra isomorphic to the algebra of $SL(2C)$. These algebras can be used to construct mass operators which are consistent with the angular condition (3.48). Further, it is found that each of the resulting mass operators is equivalent to one which can be derived from an infinite component wave equation. Moreover, it is shown that these mass operators admit spacelike solutions, so that one is confronted with these unphysical solutions in attempting to carry out the program of saturating the current algebra at infinite momentum. However, if these spacelike solutions are uncoupled by the current operator, then one could still saturate the current algebra, but this possibility is closed since it has been shown that the current does in fact connect the spacelike and timelike solutions in all nontrivial cases.

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Erratum

Dynamics of a Double-Peaked Resonance, R. RUSSELL CAMPBELL, PHILLIP W. COULTER, AND GORDON L. SHAW [Phys. Rev. D 2, 1184 (1970)]. The ordinate label η of the top curve of Fig. 1 was accidentally deleted in the printing. In the caption of Fig. 1(a), ‡ should read ρ. In the caption of Fig. 1(b), the equation should read $\delta=\delta_{\mathrm{BW}}\{1+0.1/[(s-12)^2+0.5]\}$.