\( \rho^0 \rho^0 \eta^0 \) IN THE T REGION

J. Chapman, B. Green, A. Honma and B.P. Roe

University of Michigan,
Ann Arbor, Michigan, USA

(Presented by J. Chapman)

The \( T(2190) \rho^0 \rho^0 \eta^0 \) resonance proposed by Kalbfleisch et al.\(^1\)) has not been confirmed by Donald et al.\(^2\)) in similar data. Additional results on \( \bar{p}n \rightarrow \rho^0 \rho^0 \eta^- \) from Smith et al.\(^3\)) show no evidence for a narrow \( \rho^0 \rho^0 \eta \) state at the \( T \). To investigate the origin of this contradiction, we have re-analysed the BNL data\(^1\)) utilizing the maximum likelihood analysis technique used on all but the BNL data. In this way we are able to determine that the data samples are consistent. A new data set has also been added at \( p_{lab} = 0.84 \text{ GeV/c} \).

The percentage of \( \rho^0 \rho^0 \eta^0 \) is plotted in Fig. 1 as a function of the centre of mass energy for several experiments. The original Kalbfleisch data are also displayed for comparison. Although there is some structure in the maximum likelihood analysis, no convincing \( T \) resonance can be inferred. Note that the high point from the re-analysis of the BNL data does not correspond to the original high point of Kalbfleisch. The errors on this low statistics point indicate < 2 standard deviations from the neighbouring data points.

It is our conclusion that no significant \( \rho^0 \rho^0 \eta^0 \) resonance structure is indicated by the maximum likelihood fitting analysis.

* * *

REFERENCES

3) G. Smith, these proceedings (previous communication).
Fig. 1 The percentage of $\rho^0\rho^0\pi^0$ as a function of the total centre-of-mass energy. The results of three maximum likelihood fitting analyses are shown, as well as the original data of Kalbfleisch done by data cuts. The re-analysis of the BNL data by maximum likelihood yields identical results for the lower two energies but a difference at the higher BNL data point. The errors shown are for the maximum likelihood fit and are larger than the original errors published by Kalbfleisch (Ref. 1).