PHASE SHIFT ANALYSIS OF πN SCATTERING IN REGION 160–600 MeV

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The phase shift analysis of πN scattering has been carried out in the region 160–600 MeV. The independent analysis of $\pi^+ p$ scattering was the first half of this procedure and was devoted to the extraction of isospin I=3/2 amplitudes. The second half of the analysis procedure was analysis of $\pi^- p$ scattering when the isospin I=3/2 amplitudes were quasifixed from the $\pi^+ p$ analysis, except the P_{33} amplitude. We obtained the isospin I=1/2 amplitudes and the second set of the isospin I=3/2 amplitudes coinciding with the first one within errors, except P_{33} phase shifts. The charge splitting of P_{33} phase shifts ($\cong$ 2 degrees) is observed changing a sign at 350 MeV and vanishing at 600 MeV — see Figure. Marked deviations from Prof. Hohler's analysis are found for S- and P-amplitudes as a result of using the new precision data and untraditional methods of analysis. The procedure of analysis is described in [1].

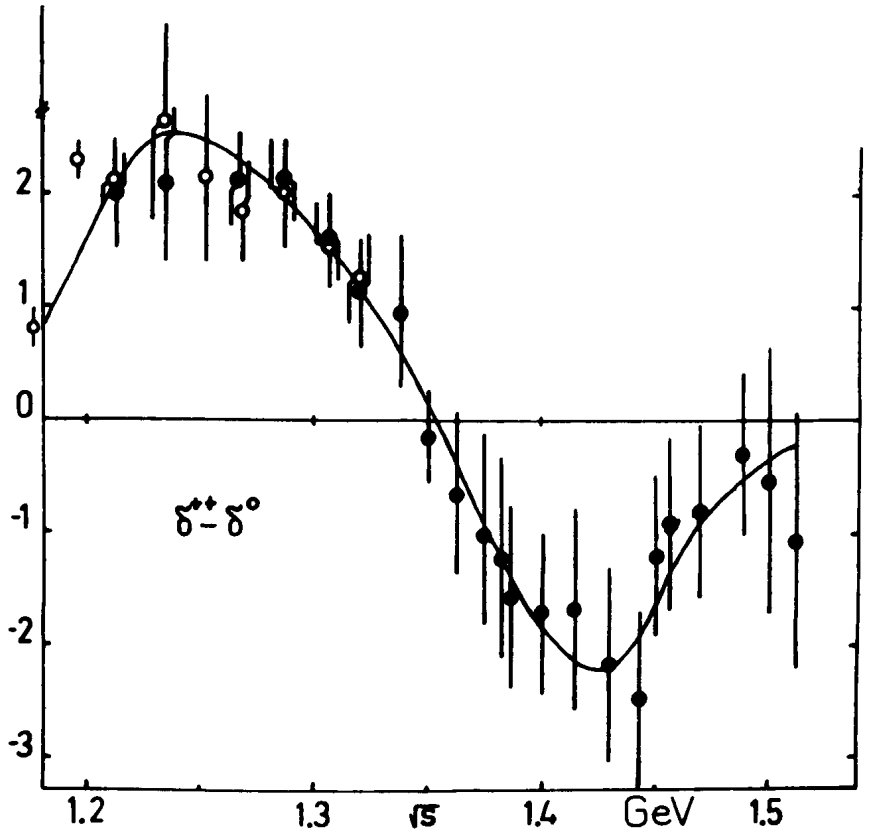

Fig. Charge splitting of P_{33} phase shifts. Difference $\delta_{33}^{++} - \delta_{33}^{0}$ obtained in this analysis (shown by solid circles) is plotted against the c.m. energy. Also presented (by open circles) are results obtained by D.Bugg

REFERENCES

1. *Abaev V.V., Kruglov S.P.* Preprint PNPI–1794. St.Petersburg, 1992. 44 p.