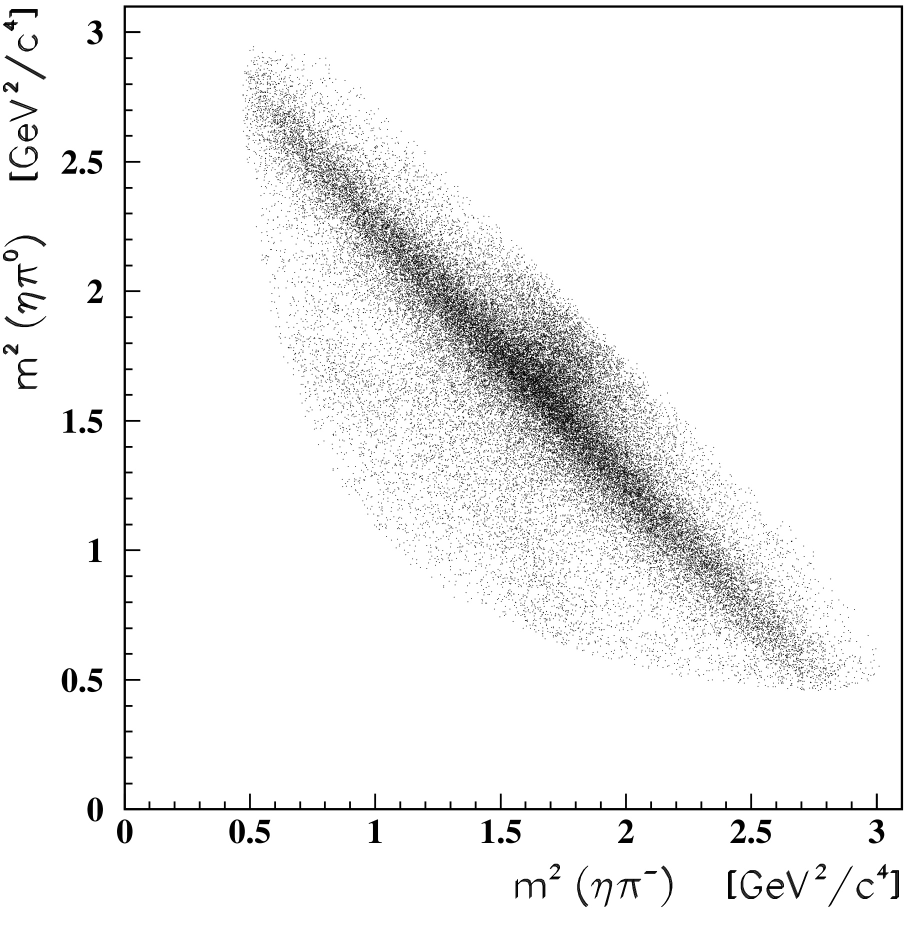

Fig. 1. Dalitz plot (not acceptance corrected) of the final sample of $\pi^-\pi^0\eta$ events from the annihilation reaction $\bar{p}d \rightarrow \pi^-\pi^0\eta\ p_{spectator}$ with $\mathrm{P}(p_{spectator}) < 100$ MeV/c.

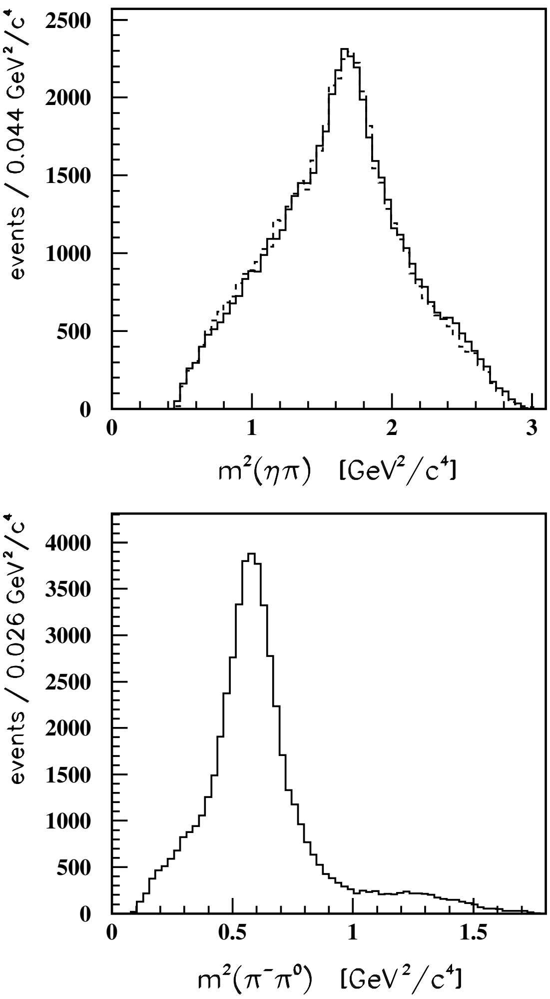

Fig. 2. Projections of the Dalitz plot. The small difference between the $\eta\pi^0$ and $\eta\pi^-$ histograms (full and dashed lines, respectively) is found to be due to the experimental acceptance.

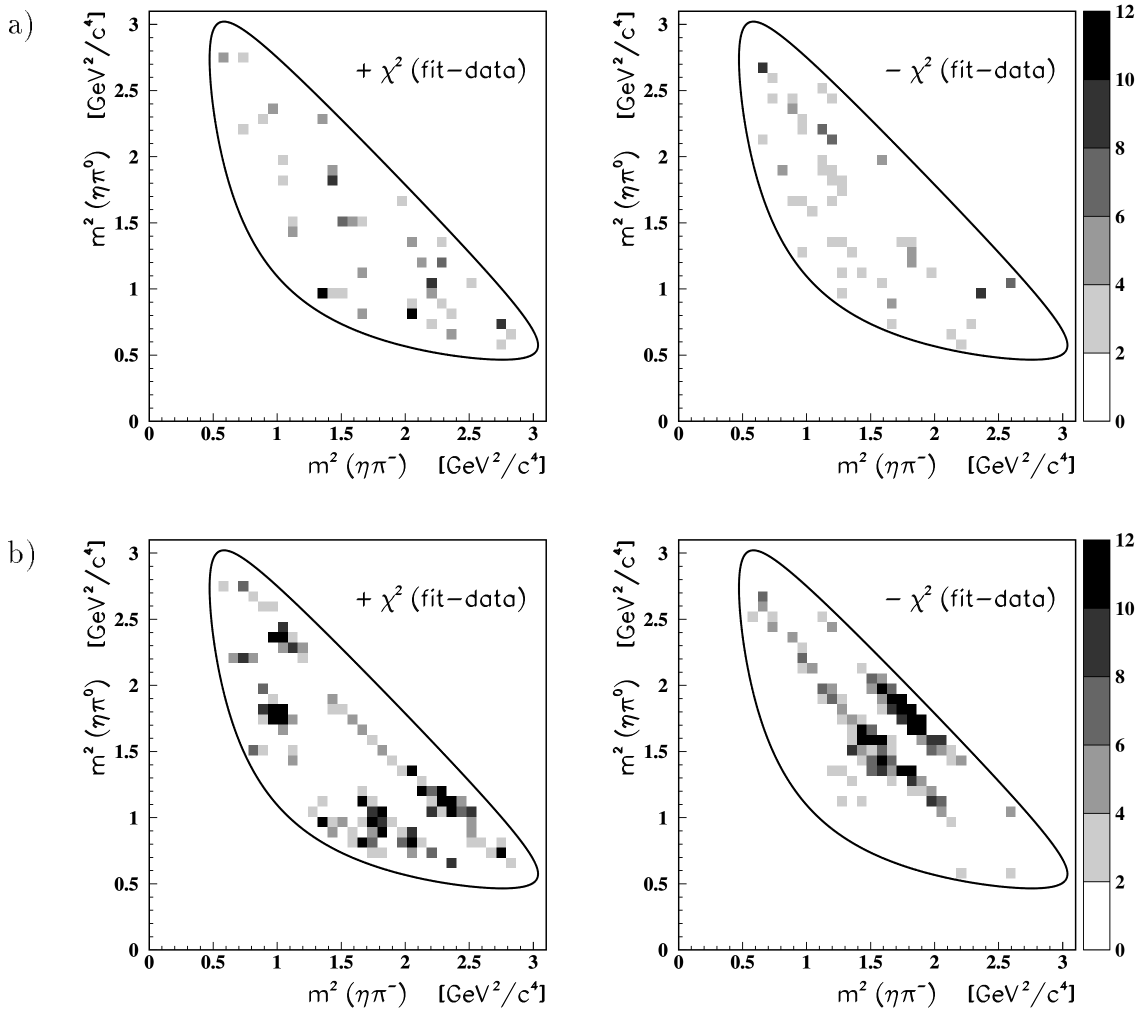

Fig. 3. a) Distribution of the deviations χ_i^2 (the individual terms of Eq. (1)) between the best fit (Table 1) and data. In the left panel the fit exceeds the data, in the right panel the data exceed the fit. b) Same as a) for a fit that includes the resonances $\rho^-(770)$, $a_2^{0/-}(1320)$, $a_0^{0/-}(980)$ and $a_0^{0/-}(1450)$, but not the $\eta\pi$ P-wave.

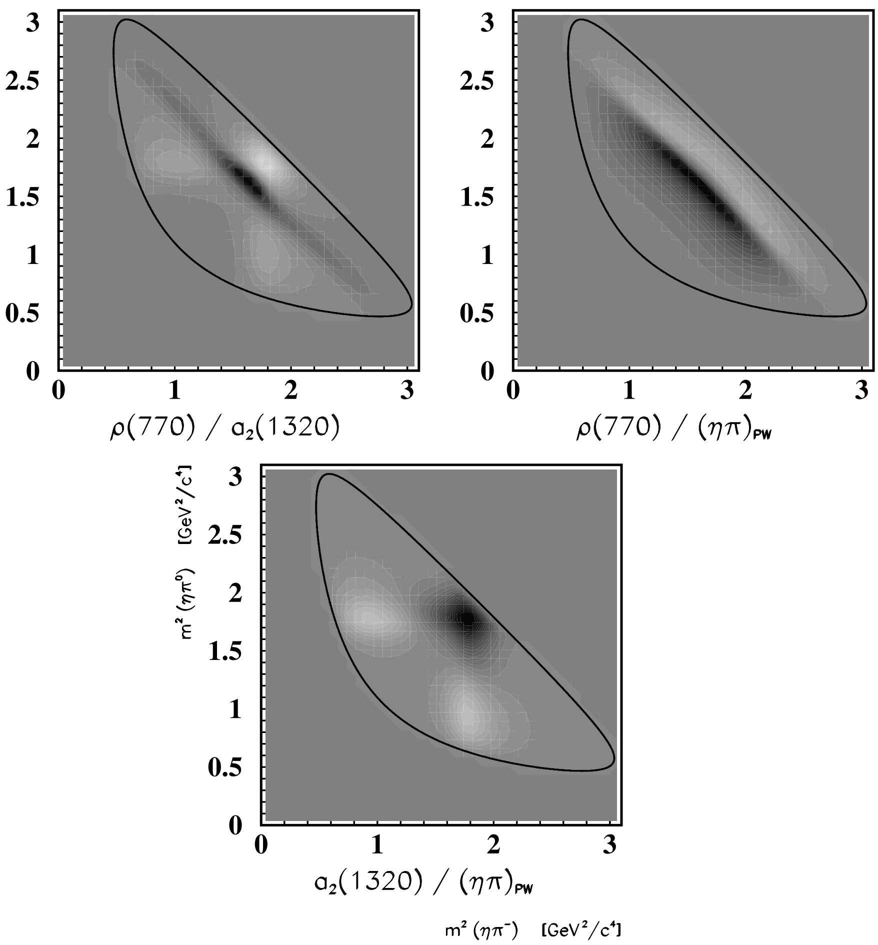

Fig. 4. Intensities of the interferences of the dominant annihilation amplitudes for the $^3S_1$ initial state. The relative phases are those of Table 1.

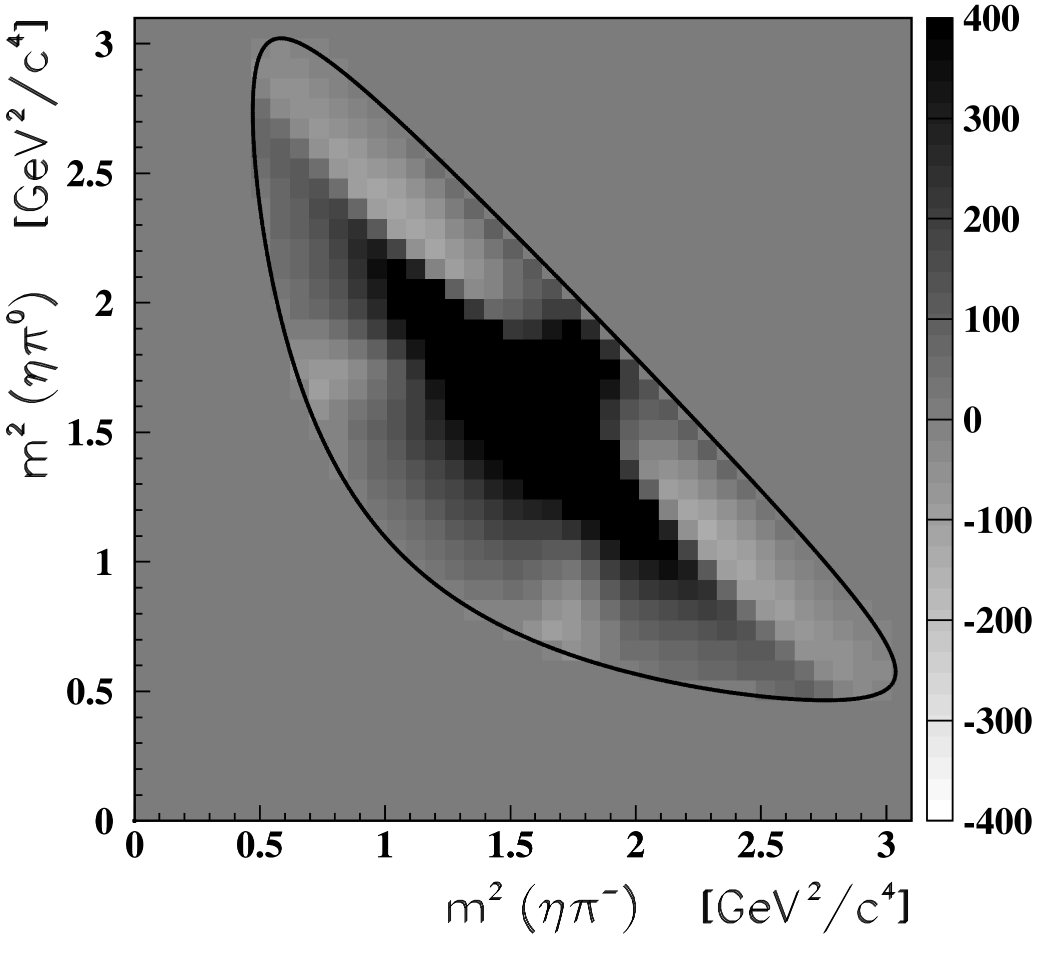

Fig. 5. Intensity distribution of all fitted $(\eta\pi)_P\pi$ amplitudes and their interferences with the other amplitudes; the contributions of the two inital $\bar{p}n$ states (Table 1) are added incoherently.

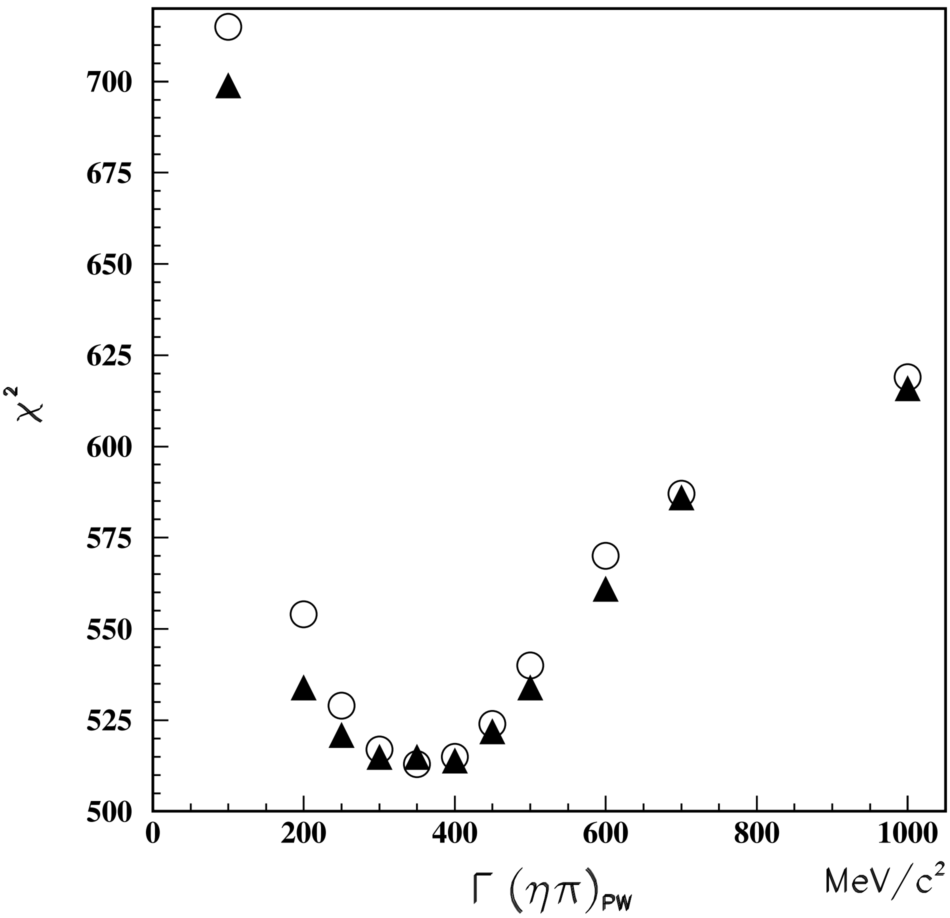

Fig. 6. χ^2 scan of the width of the $\eta\pi$ P-wave resonance for a fixed mass of 1398 MeV/c^2 ($N_{d.o.f.}$ = 411 - 12; circles) and for fitted mass ($N_{d.o.f.}$ = 411 - 13; triangles).