$\tau^{\pm}\rightarrow 3\pi^{\pm}\nu_{\tau}$ Structure

Model Indep Fits to H_X (A,S,V) OPAL

- Non-Axial Comp's Limited (95%C.L.)

$$\frac{(3\pi^{\pm})^{\mathrm{non-A}}}{(3\pi^{\pm})^{\mathrm{A}}} < 26\% \qquad \frac{(\pi^{\pm}(1300))^{\mathrm{S}}}{(3\pi^{\pm})^{\mathrm{tot}}} < 0.84\%$$

Comparison with Models DELPHI,OPAL

(KS) vs Isgur,Morningstar,Reader(IMR) vs Feindt(MF)

- Assume dominance by $\mathrm{a}_1(1260)$ decaying to various intermediate res's
- IMR allows $\pi(1300)$ & Polynomial Bgrd (parameterize our ignorance)
- MF $\Rightarrow$ more general (sub)res. structure
  Include a_1': M = 1700 MeV ; Γ = 300 MeV
  - Predicted in various Models
  - Possibly Observed by VES in $\rho\pi$ and $\mathrm{f}_1\pi$
  - Could explain CLEO $\mathrm{f}_1\pi$ Excess
- Fits for Model Parameters
  - Use Q^2 (DELPHI) & Q^2, s_1, s_2 (OPAL) distrib's

Agreement Data vs KS/IMR Models is Poor

- Especially evident in Dalitz Projections
- Implications for $M_{\nu_{\tau}}$ and P_{τ}