

$b_1\pi$ PWA

- Looking at two processes for the moment
- $\gamma p \rightarrow h_2(2^{+-}) \rightarrow b_1\pi$ (L=1)
- $\gamma p \rightarrow (1^-) \rightarrow b_1\pi$ (L=0)
- $b_1\pi \rightarrow \omega\pi\pi \rightarrow \pi^+\pi^+\pi^-\pi^-\pi^0$

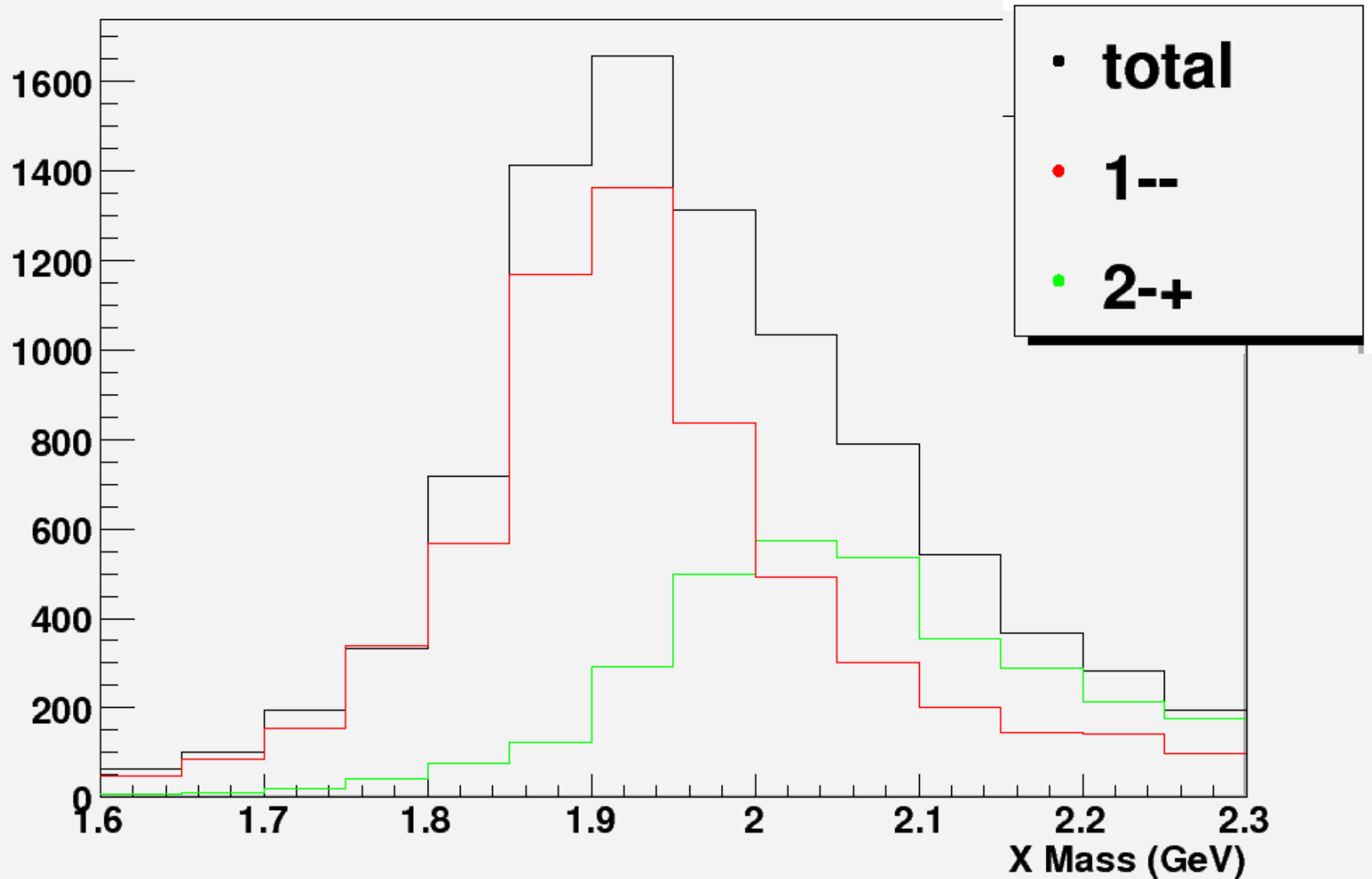
Event Generation

- Need to weight event sample by amplitudes
- Can't use genr8
- Incorporate angular distribution with amplitudes from qft++
- Amplitudes+Breit-Wigners

Event Generation

- Generated 300K events weighted by amplitude
- 1M phase space event “raw” sample
- Run both through hdparsim
- Kinematic fit both (crucial!)
 - Amplitudes are nonsense without energy/momentum conservation

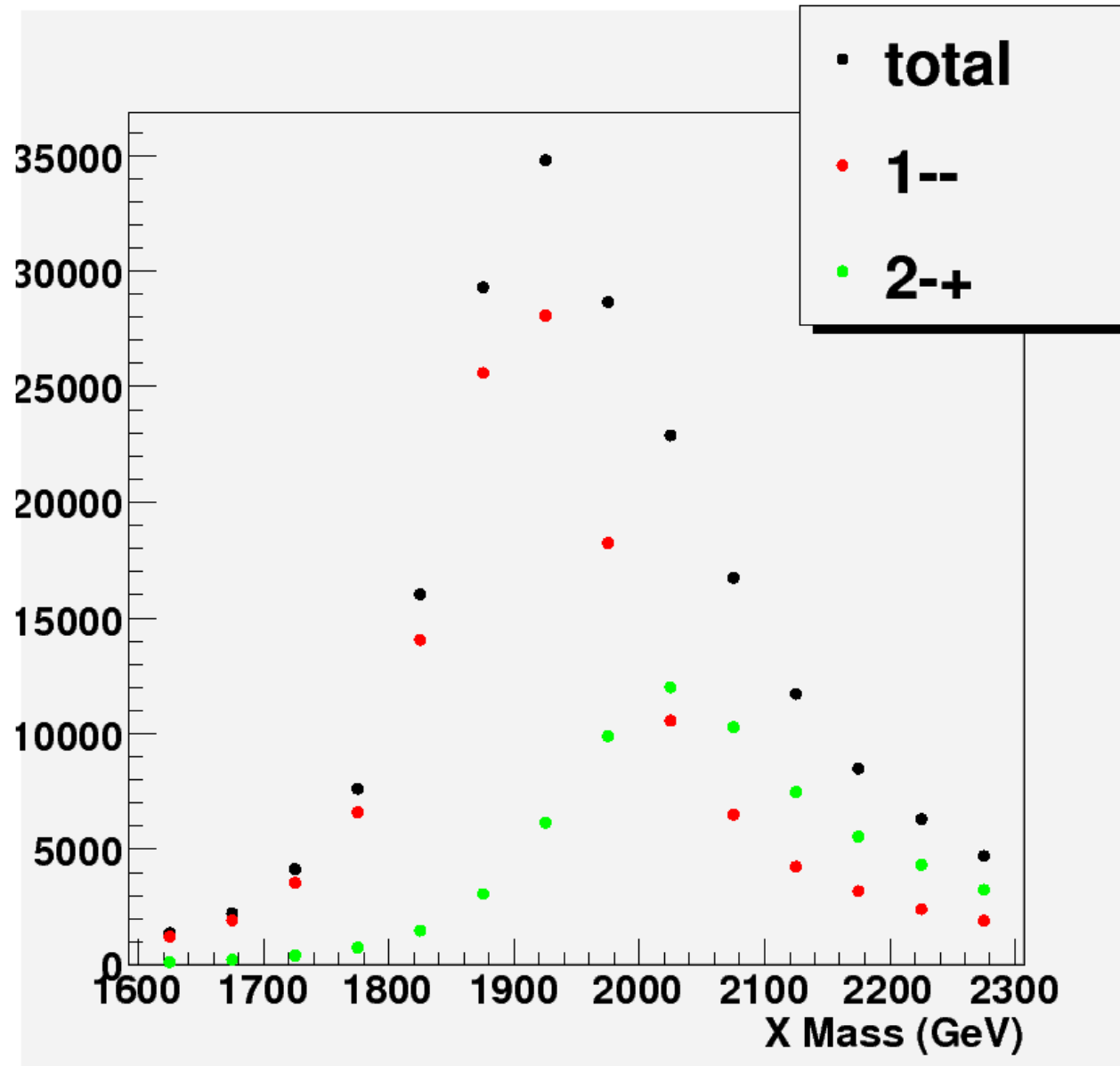
Generated Data Sample



PWA

- ruby-pwa
- Amplitudes from qft++ (same as those used to weigh data sample, but without Breit-Wigners)
- Normalization integrals from accepted phase space events

Fit results



Current Work

- Use HDGeant instead of hdparsim
 - Need good error matrices for kinematic fitting
 - Other issues
- Eventually add pythia background, other amplitudes