Charm tagging

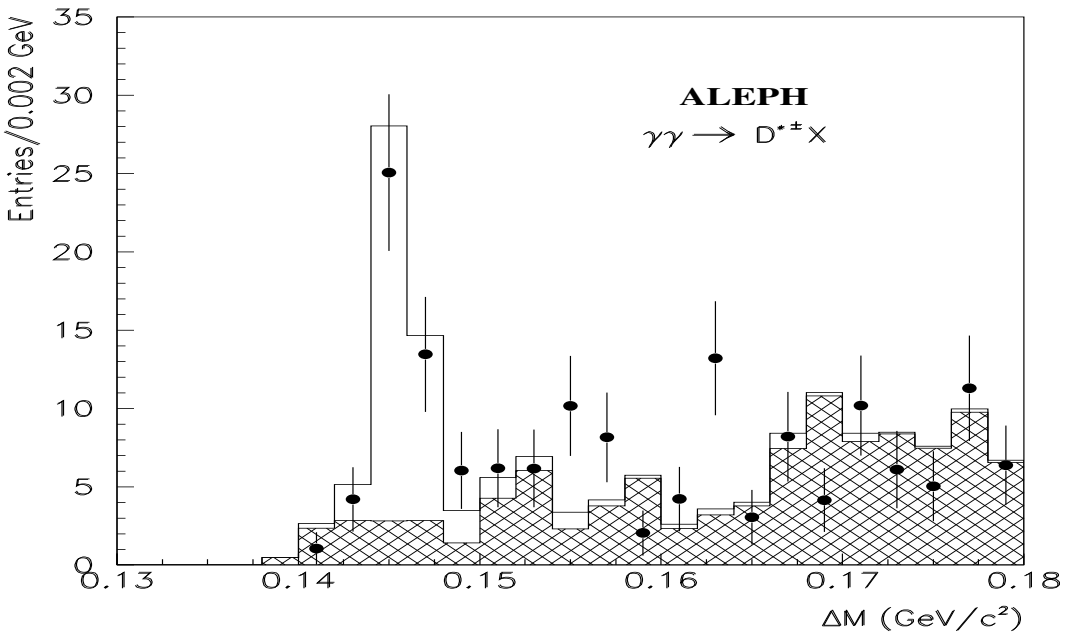
$$P(c \to D^{*+}) = 0.236 \pm 0.01$$

$$D^{*+} \to \underset{68\%}{D^0\pi_s^+} \to \begin{array}{l} K^-\pi^+\pi^+ \text{ (4.0 \%)} \\ K^-\pi^+\pi^0\pi^+ \text{ (13.8 \%)} \\ K^-\pi^+\pi^+\pi^-\pi^+ \text{ (8.1 \%)} \\ K^-l^+\nu\pi^+ \text{ (7 \%)} \end{array}$$

- D^* reconstruction
  (TPC/2γ, JADE, TASSO, TOPAZ, ALEPH)
- Slow pions : π_s^+ has little kinetic energy,
  therefore small p_t relative to D^* axis.
  (AMY, TOPAZ)
- Lepton tag
  (AMY, TOPAZ, VENUS)
- K_S^0 reconstruction (TOPAZ):

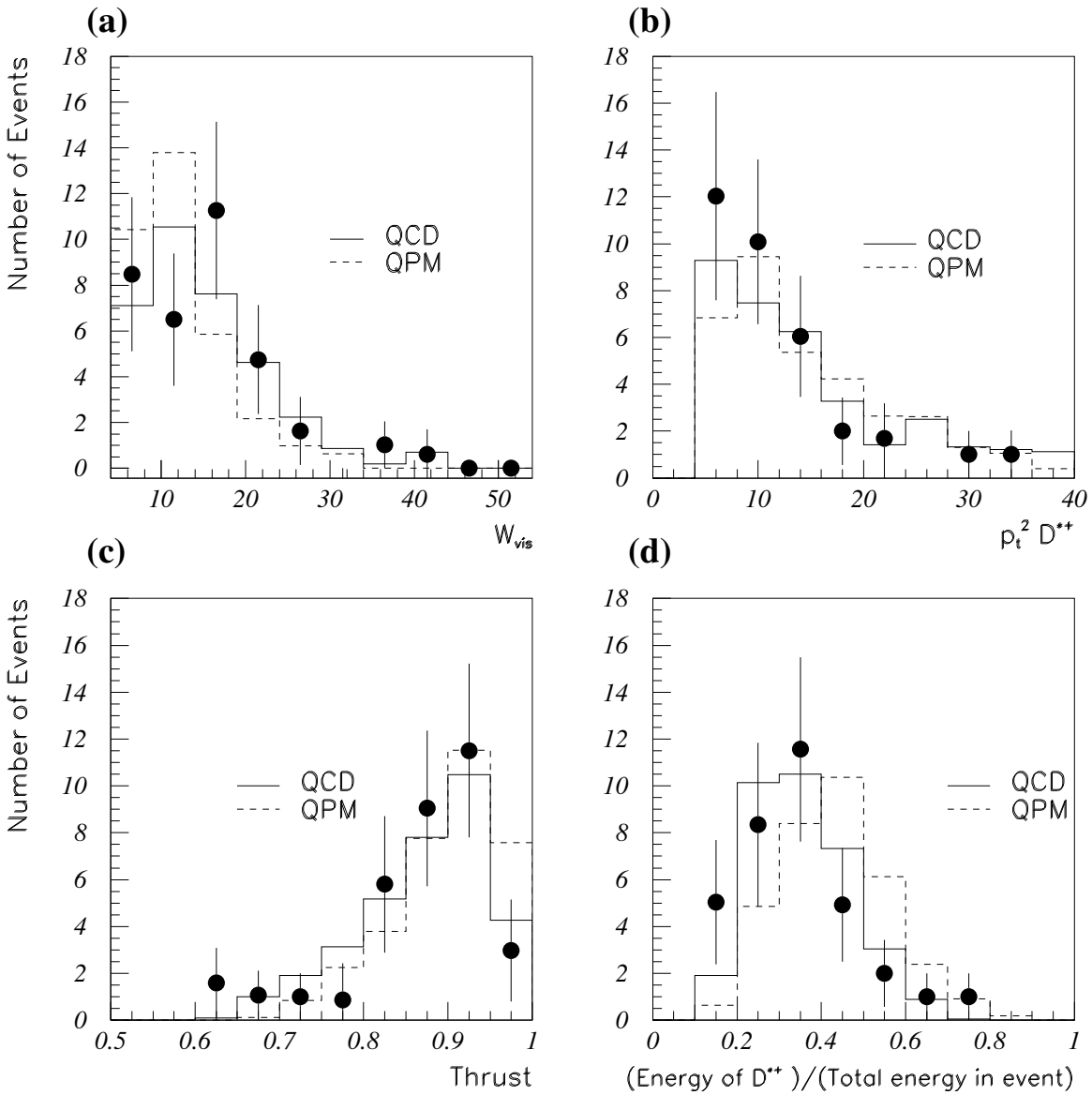
$$\frac{\sigma(e^+e^- \to e^+e^- c\bar{c})}{\sigma(e^+e^- \to e^+e^- s\bar{s})} = \frac{e_c^4}{e_s^4} = 16$$

D^* reconstruction



$$D^{*+} \rightarrow D^0\pi_s^+ \rightarrow K^-\pi^+\pi_s^+ \text{ (4.0 \%)} \quad (1)$$
$$68\% \qquad K^-\pi^+\pi^0\pi_s^+ \text{ (13.8 \%)} \quad (2)$$
$$K^-\pi^+\pi^+\pi^-\pi_s^+ \text{ (8.1 \%)} \quad (3)$$

Experiment	$\sqrt{s}$ (GeV)	L (pb^{-1})	Events	channels
TPC/2γ	29	69	12 ± 6	1
JADE	38	90	19 ± 7	2
TASSO	35	189	32 ± 8	1+2
TOPAZ	57	150	20 ± 5	1+2
ALEPH	90	73	33 ± 7	1+2+3

ALEPH D^* results

ALEPH D^* results