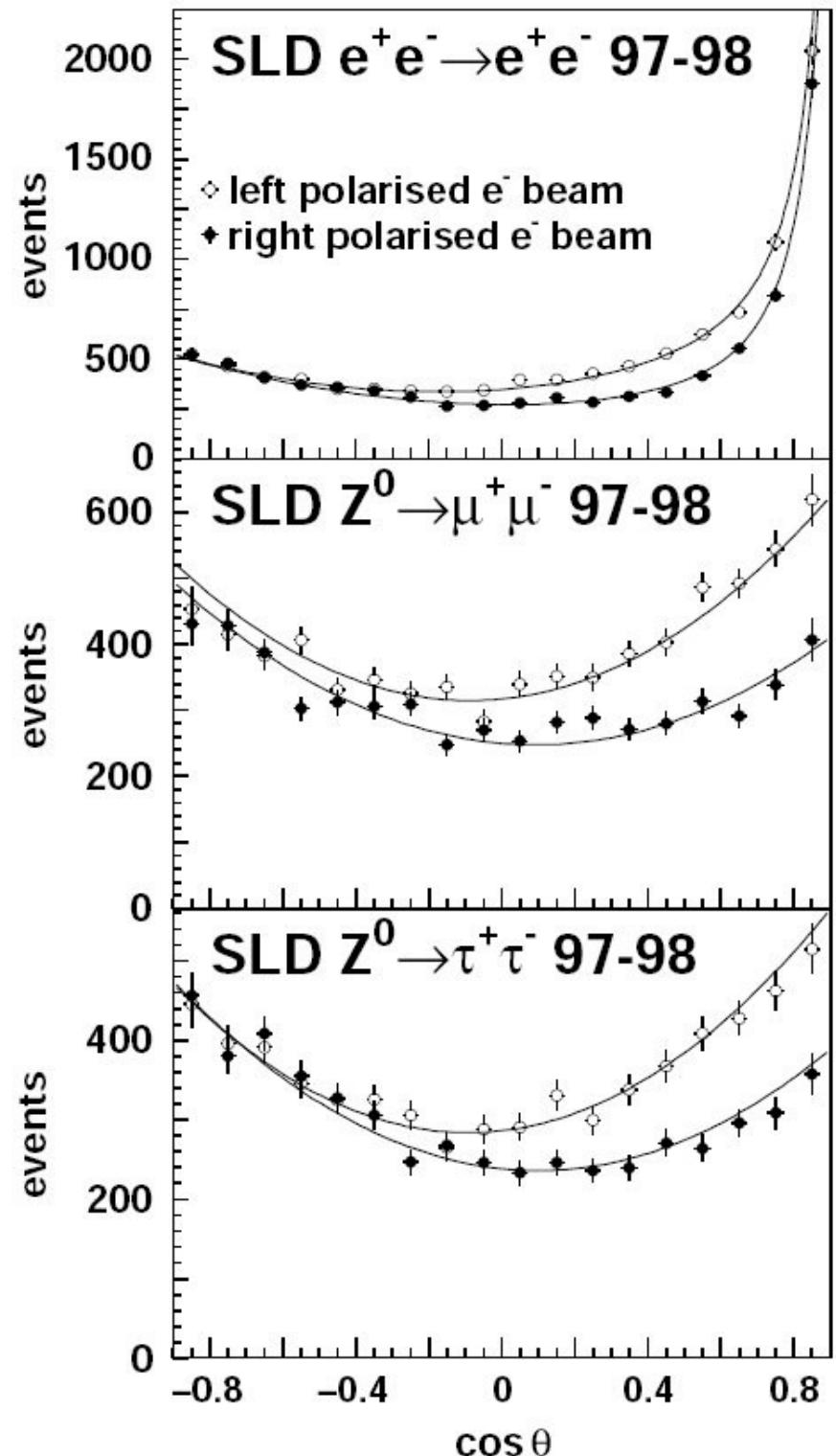


3.3.2 Electron-Positron Annihilation

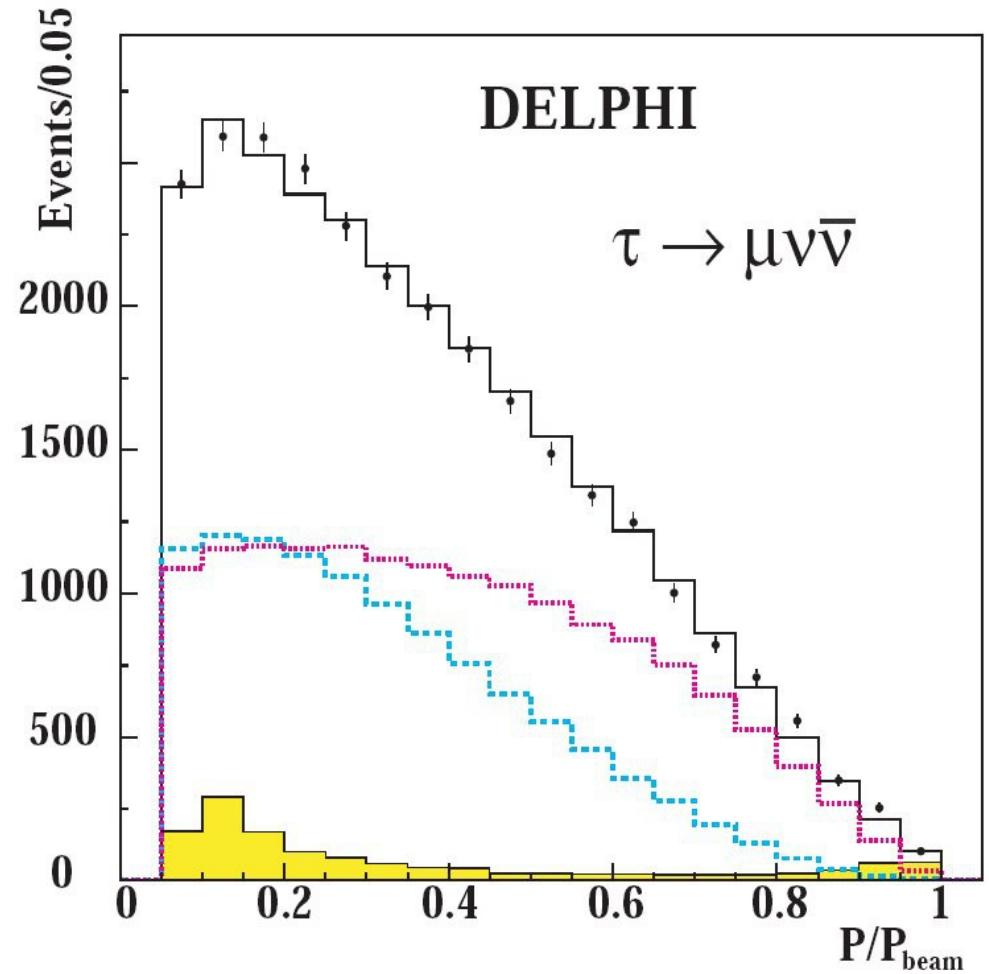
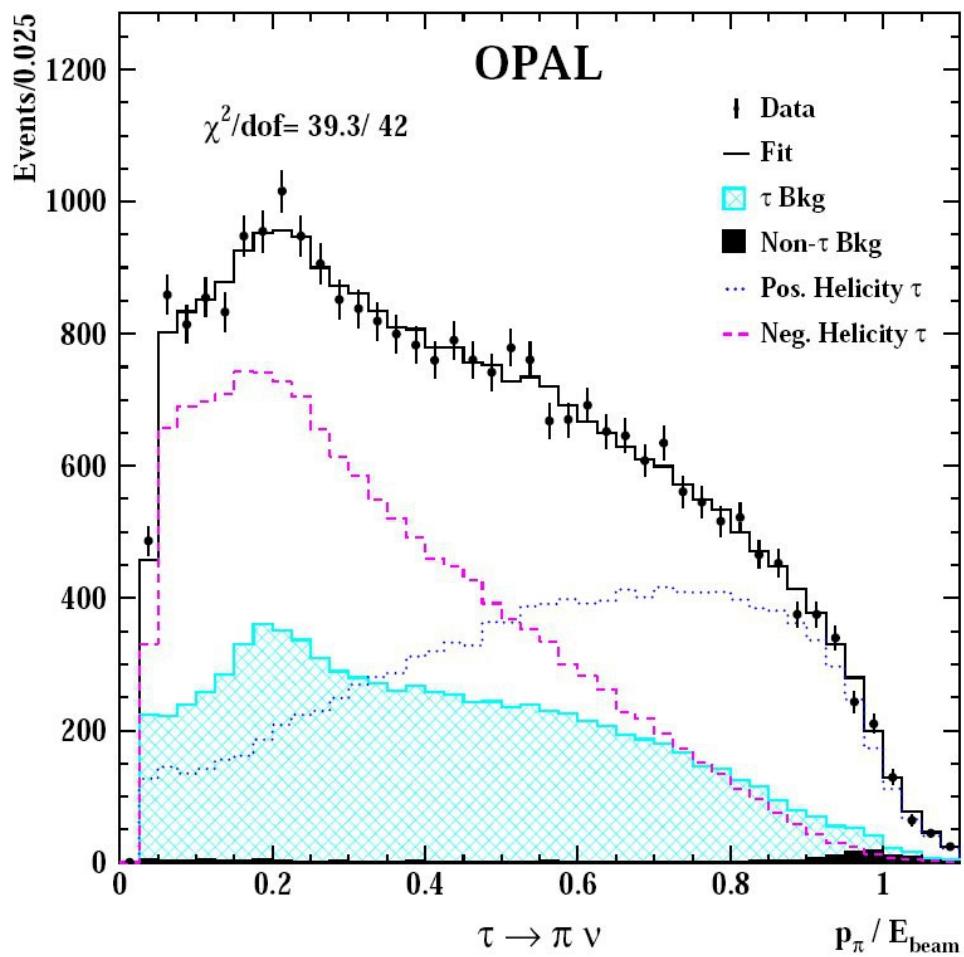
Measurement of Right-Left-Asymmetry at Linear-Collider SLC

Why is $A_{RL}^e \neq A_{RL}^{\mu,\tau}$?



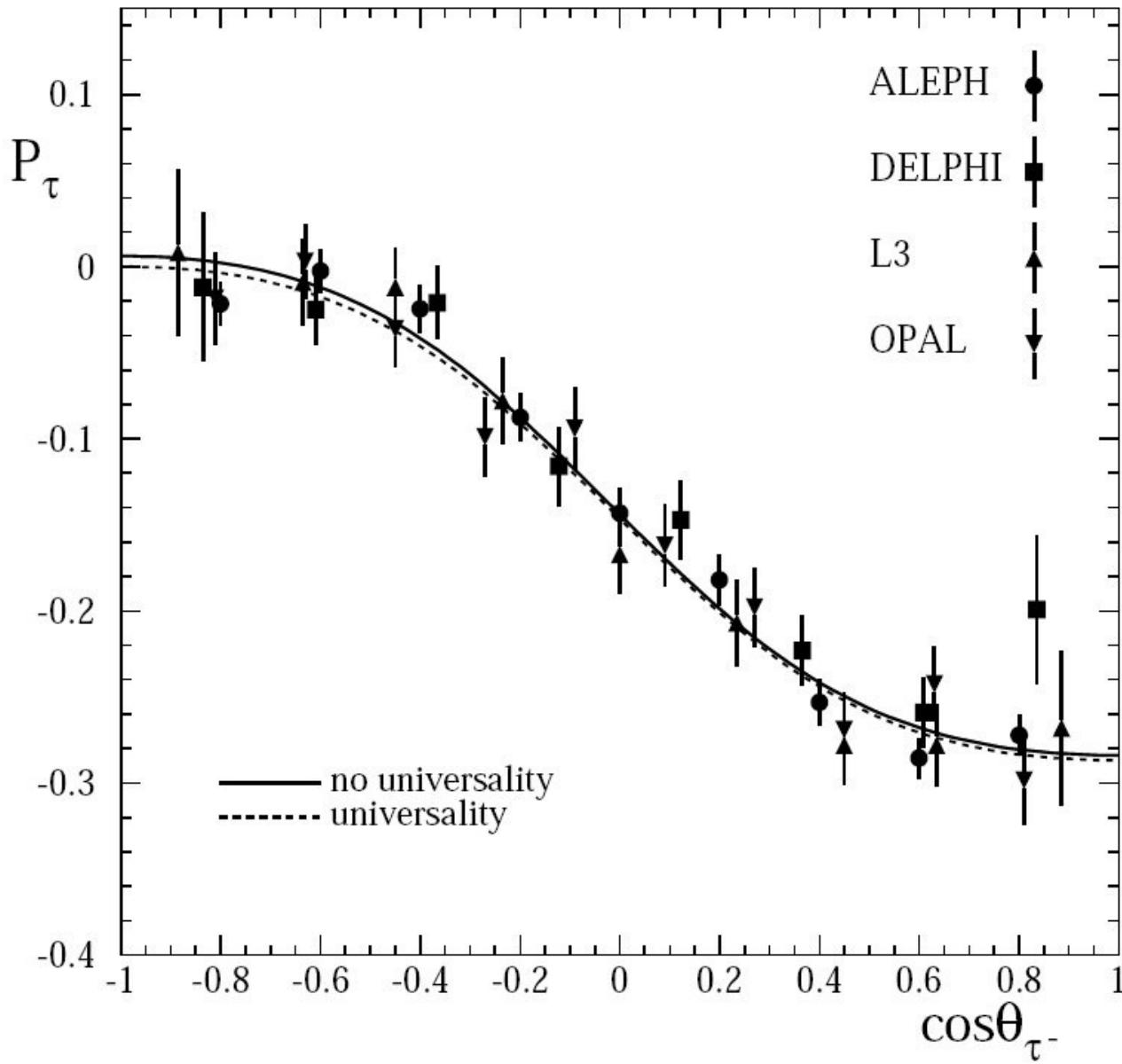
3.3.2 Electron-Positron Annihilation

Measurement of τ -Polarisation



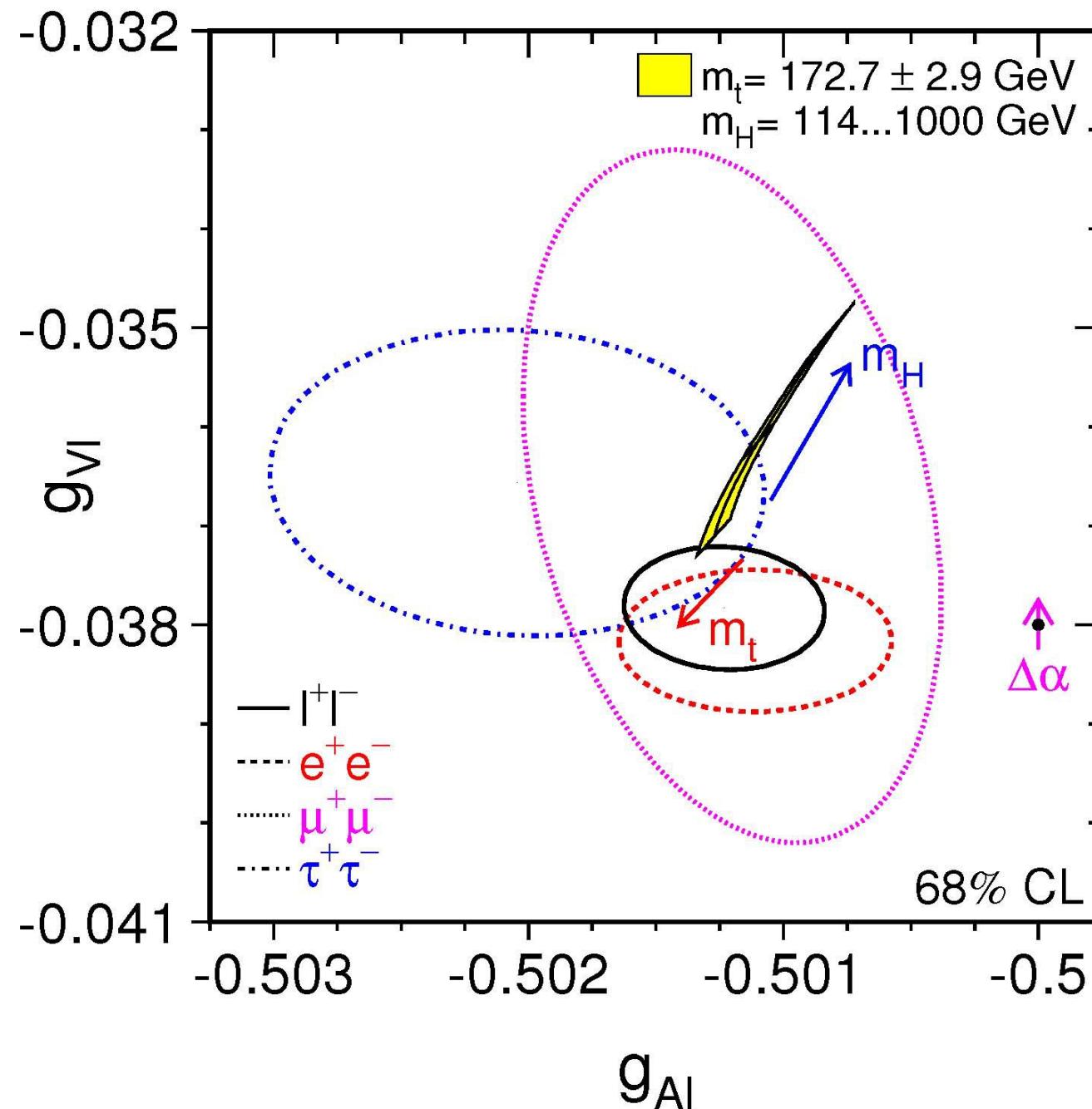
Why does positive (negative) τ -helicity prefer high (low) energetic pions?

Angular Dependence of τ -Polarisation



$$P_l(\cos\theta) = -\frac{A_l(1+\cos^2\theta) + 2A_e\cos\theta}{1+\cos^2\theta + 2A_lA_e\cos\theta} \stackrel{\text{Univ.}}{=} -A_l \frac{(1+\cos\theta)^2}{1+\cos^2\theta + 2A_l^2\cos\theta}$$

Z-couplings to Leptons



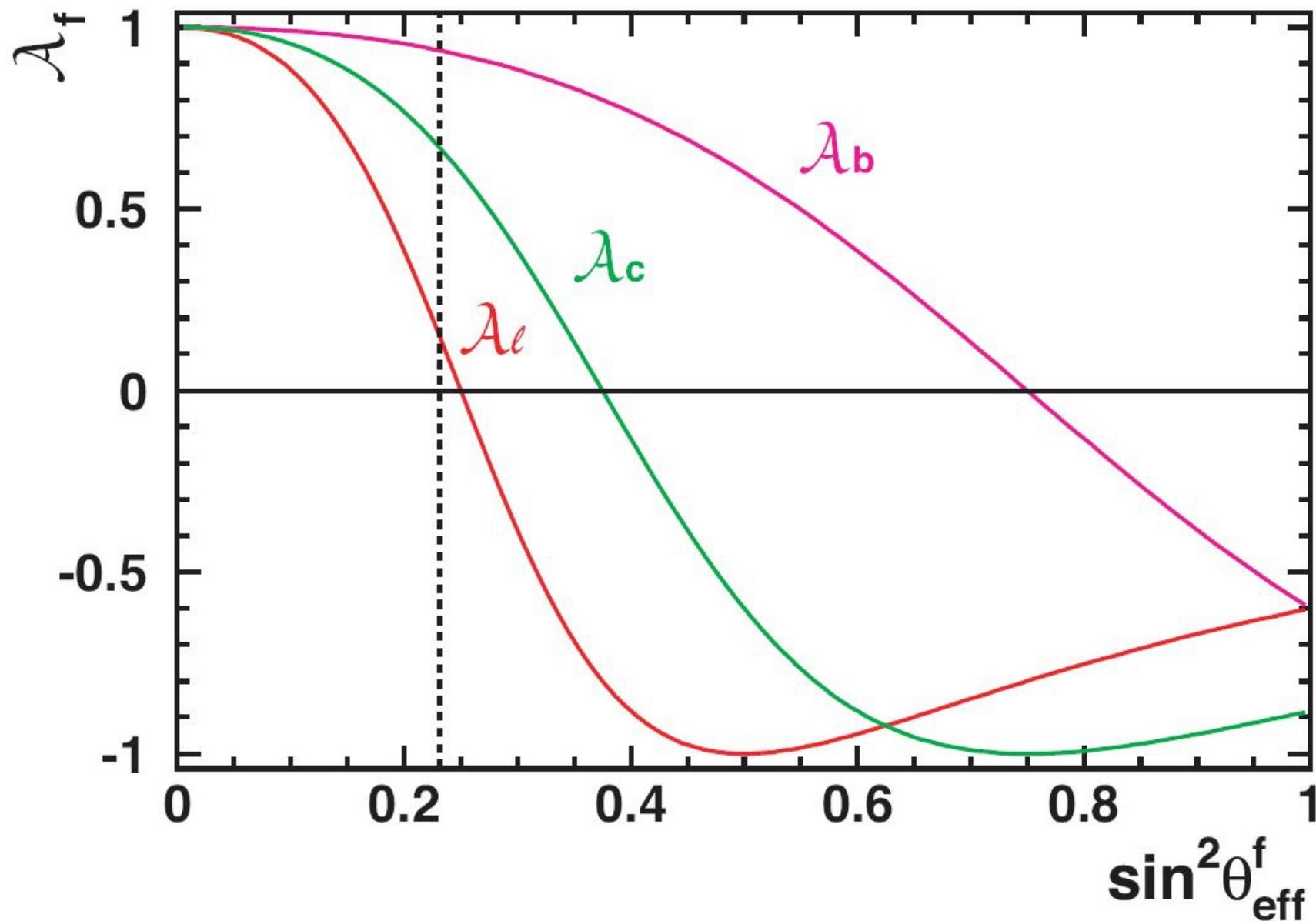
3.4 Z-Couplings to Quarks

3.4.1 ν -Nucleon Scattering

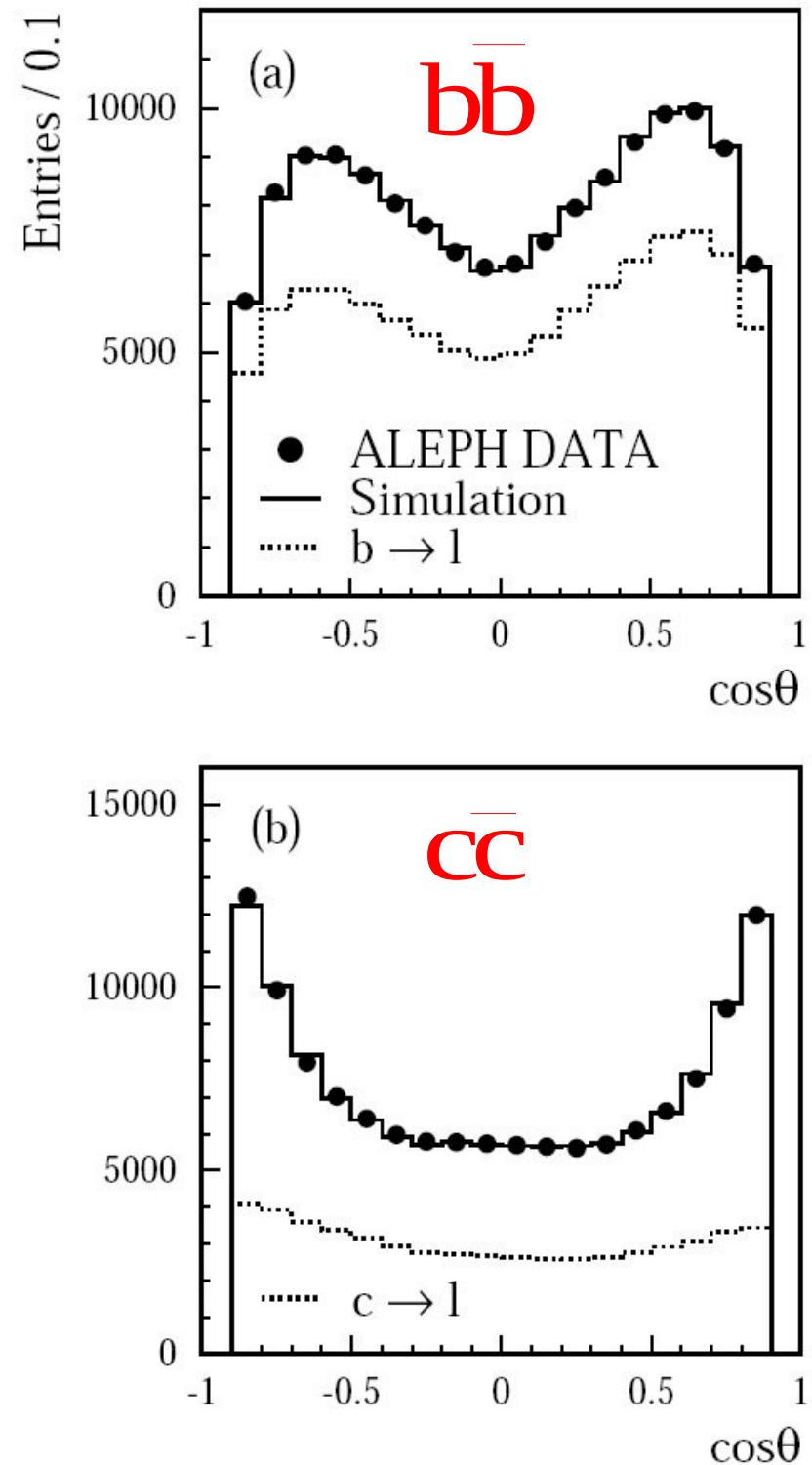
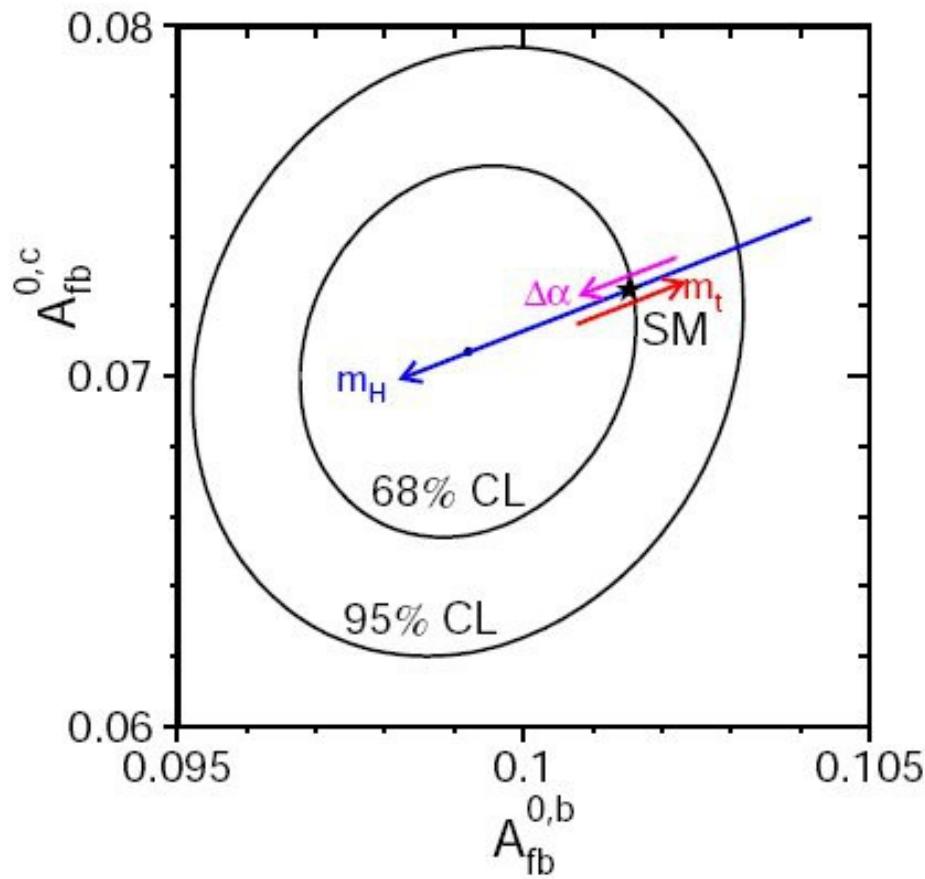
3.4.2 Electron-Positron Annihilation

Sensitivity of Asymmetry Factors wrt Mixing Angle

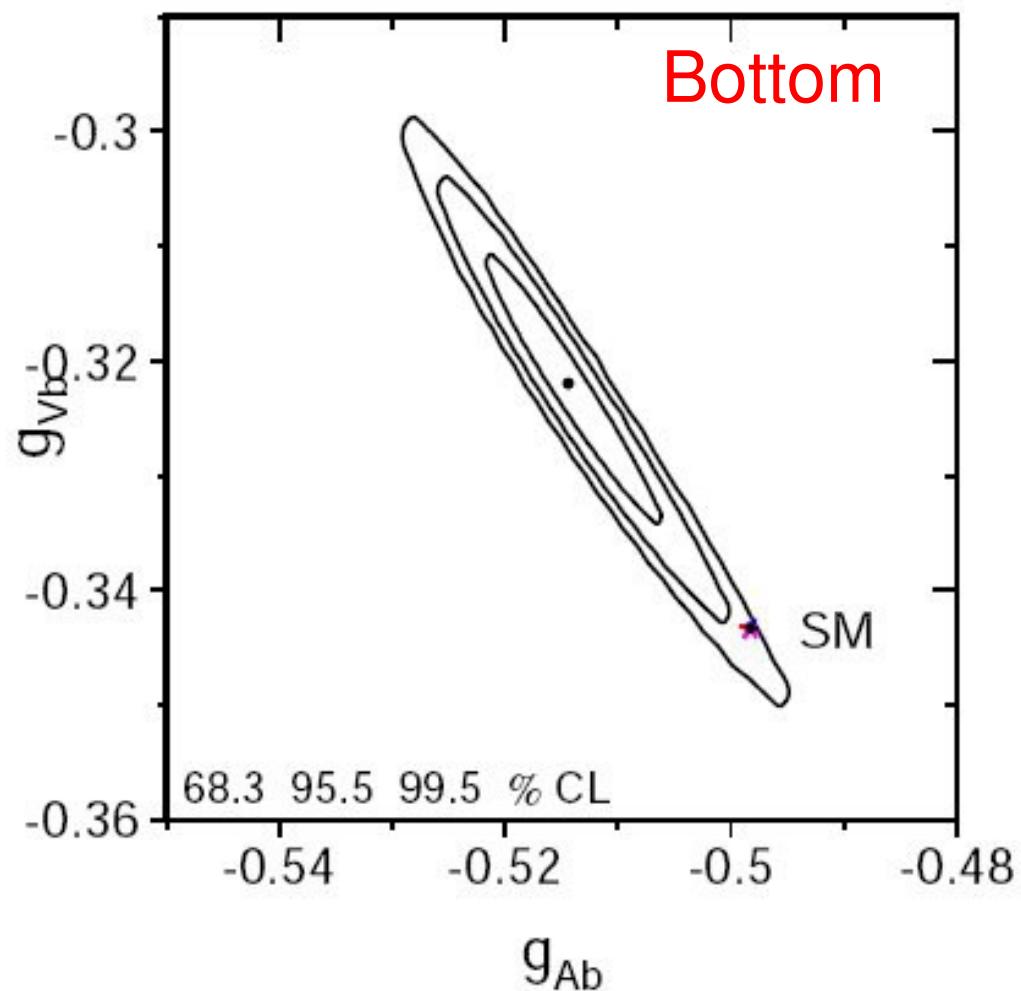
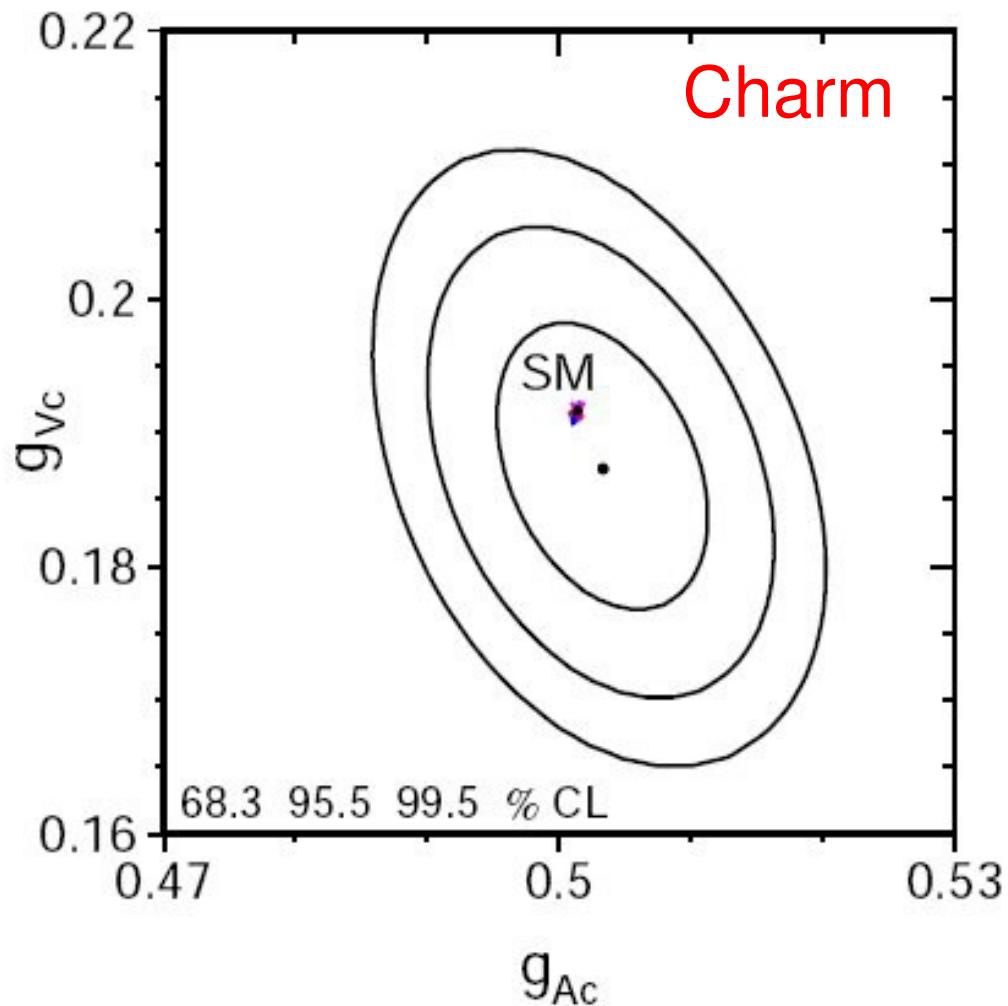
$$A_f = \frac{2g_V^f g_A^f}{(g_V^f)^2 + (g_A^f)^2}$$



Angular asymmetry for $b\bar{b}$ - and $c\bar{c}$ -events



Z-couplings to Quarks



$A_{fb}^{0,l}$	●	0.23099 ± 0.00053
$A_l(P_\tau)$	■	0.23159 ± 0.00041
$A_l(SLD)$	▲	0.23098 ± 0.00026
$A_{fb}^{0,b}$	▼	0.23221 ± 0.00029
$A_{fb}^{0,c}$	★	0.23220 ± 0.00081
Q_{fb}^{had}	*	0.2324 ± 0.0012

Average 0.23153 ± 0.00016

$\chi^2/\text{d.o.f.}: 11.8 / 5$

