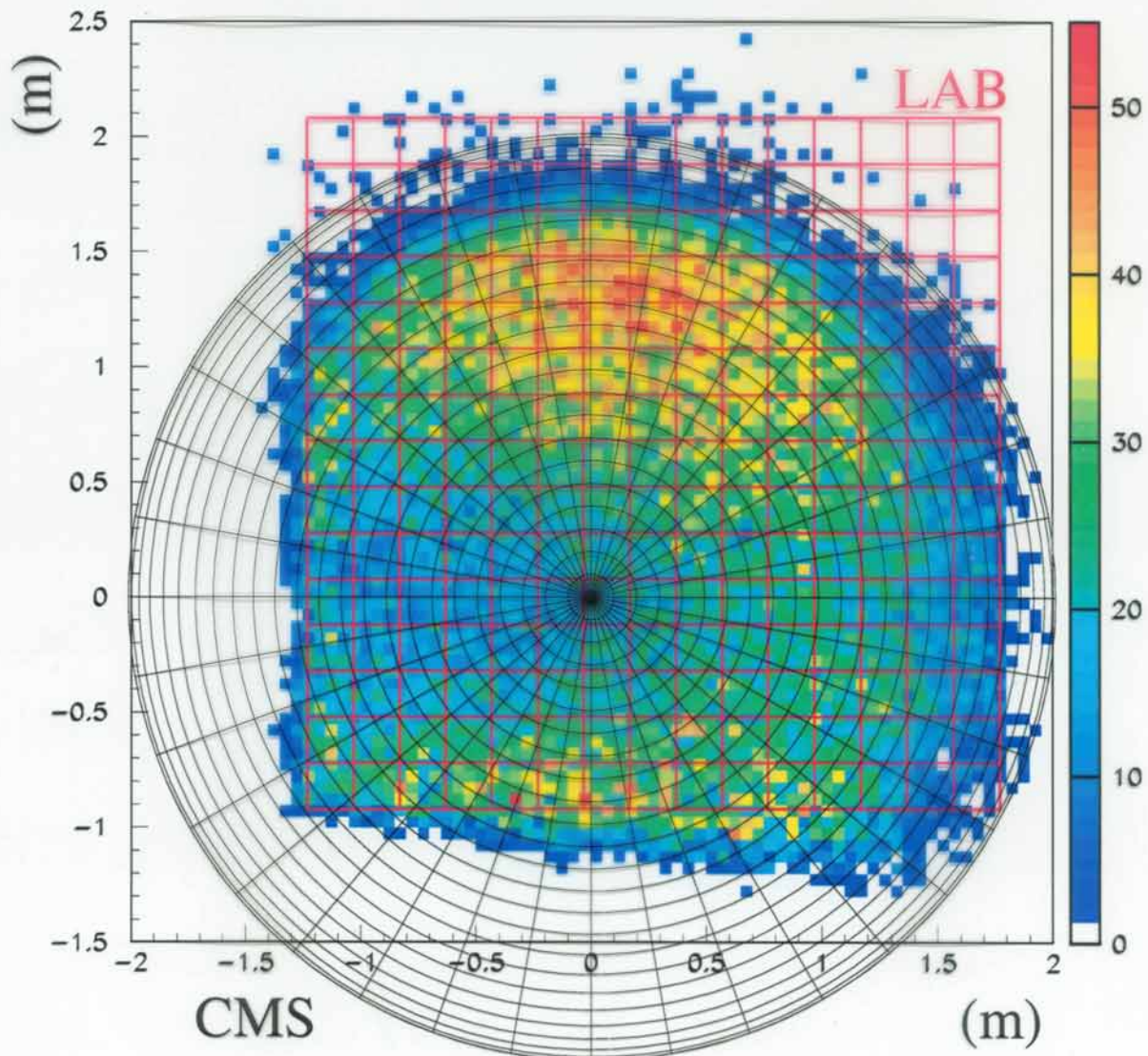
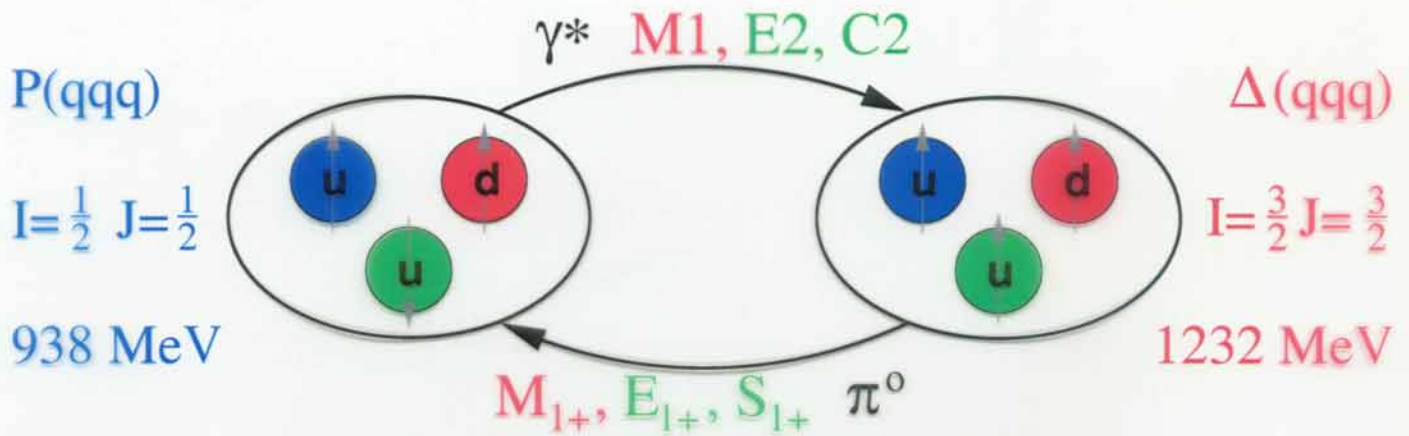


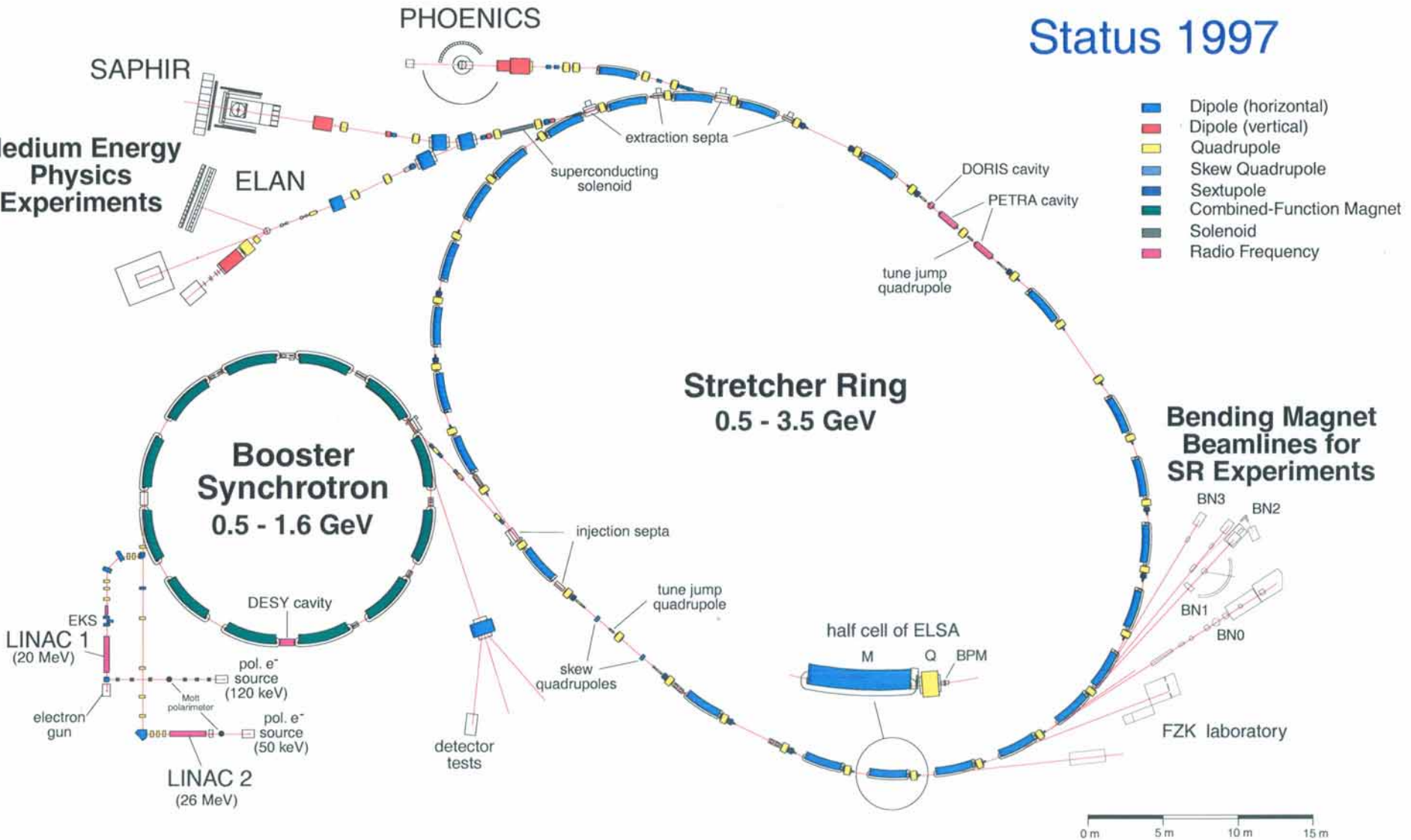
E2/M1 and C2/M1 at ELSA



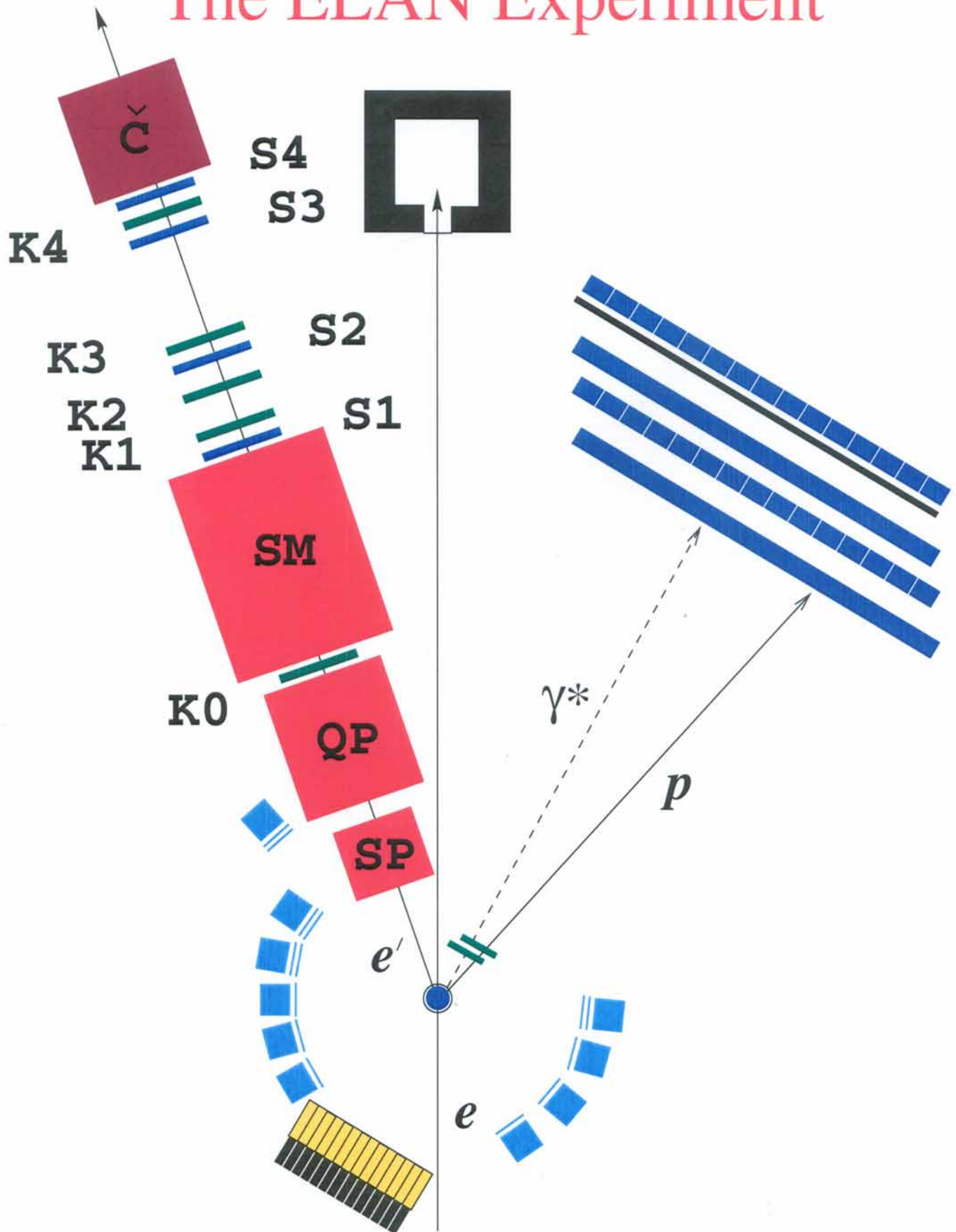
$-K^2 = 0.2 \text{ (GeV/c)}^2, W = 1232 \text{ MeV}, \Delta W = \pm 20 \text{ MeV}$

Electron Stretcher Accelerator (ELSA)

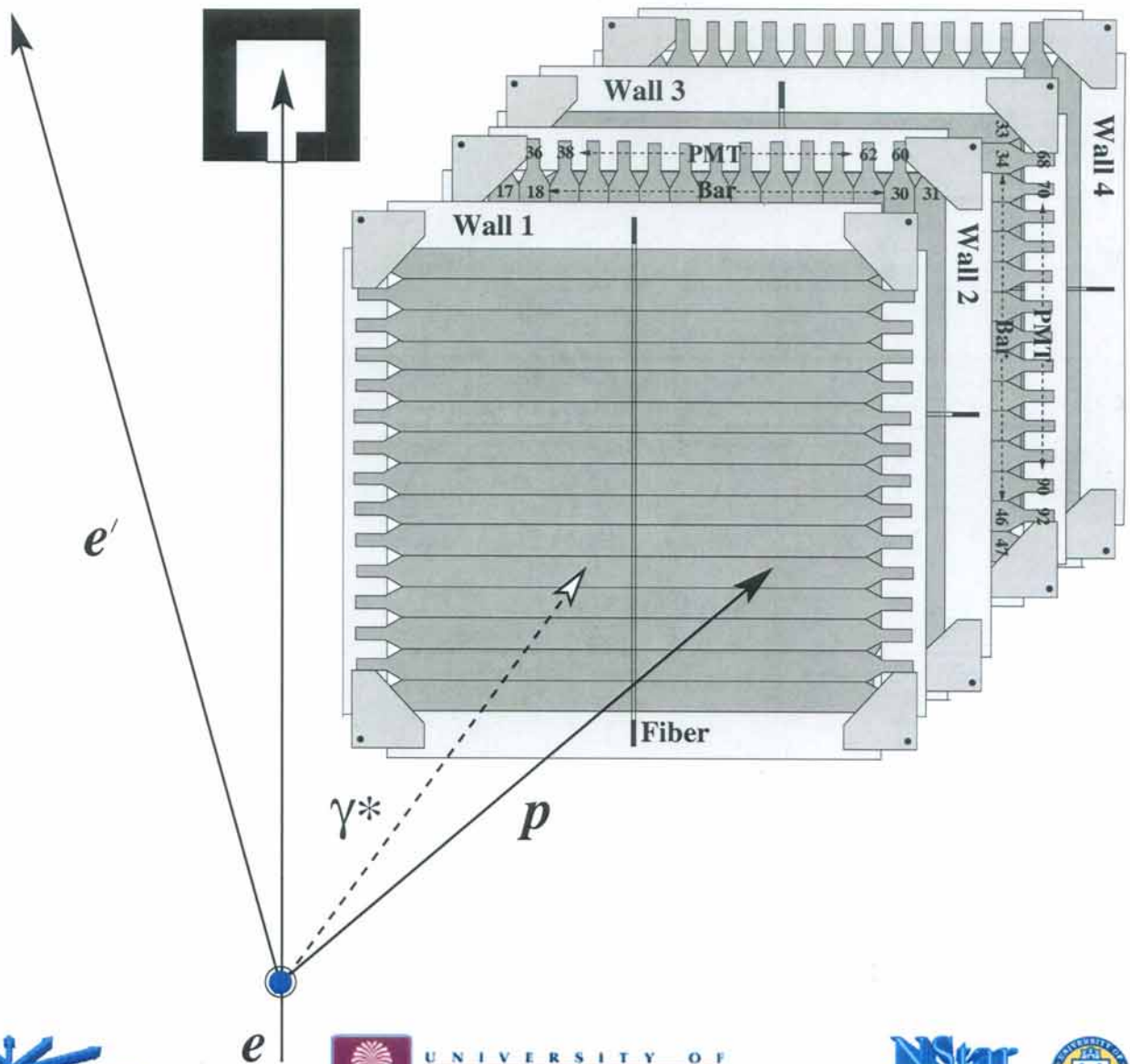
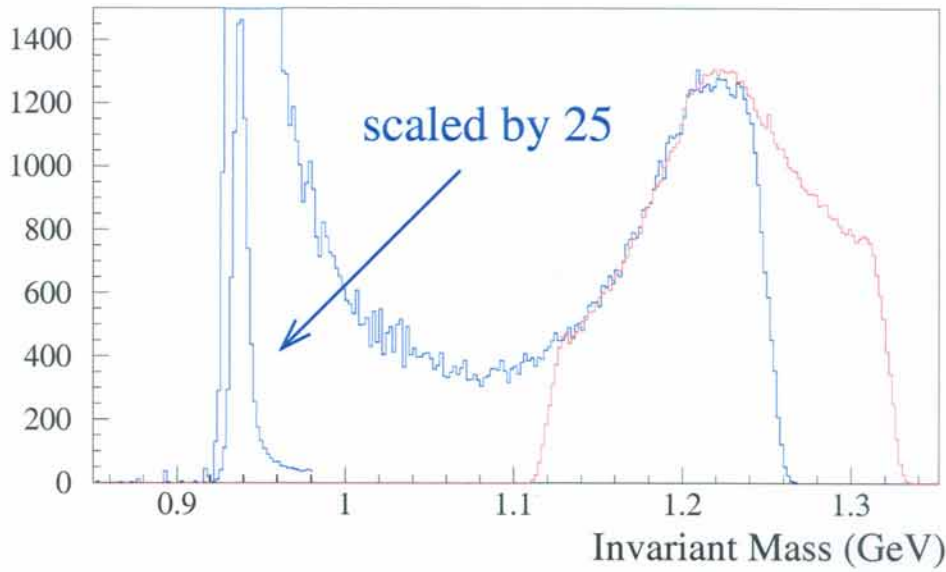
Status 1997



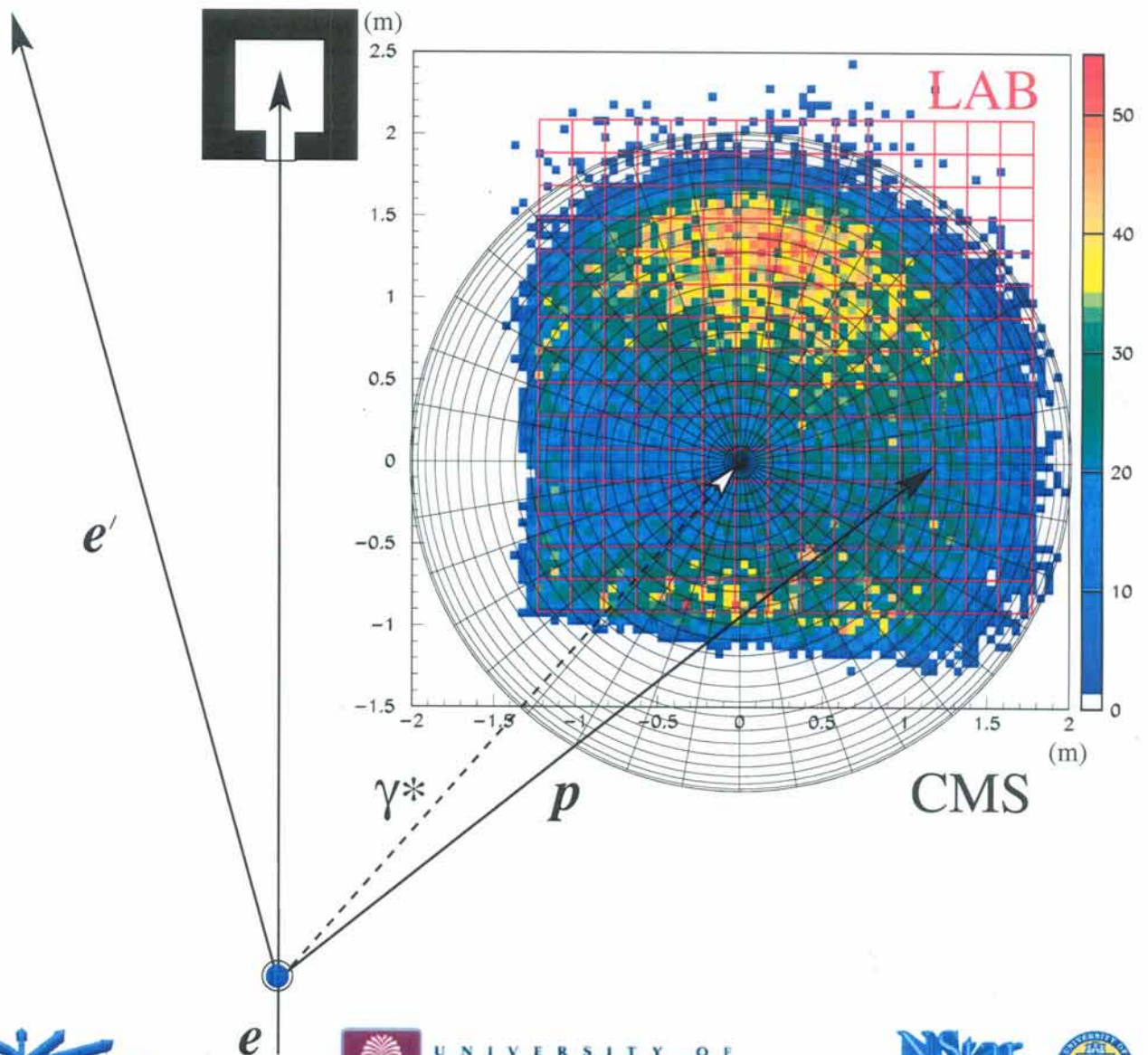
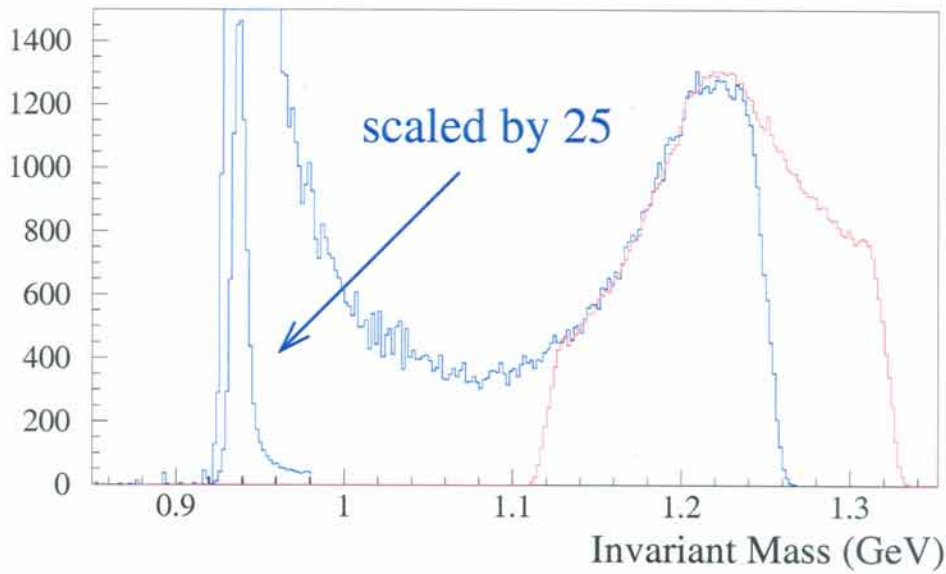
The ELAN Experiment



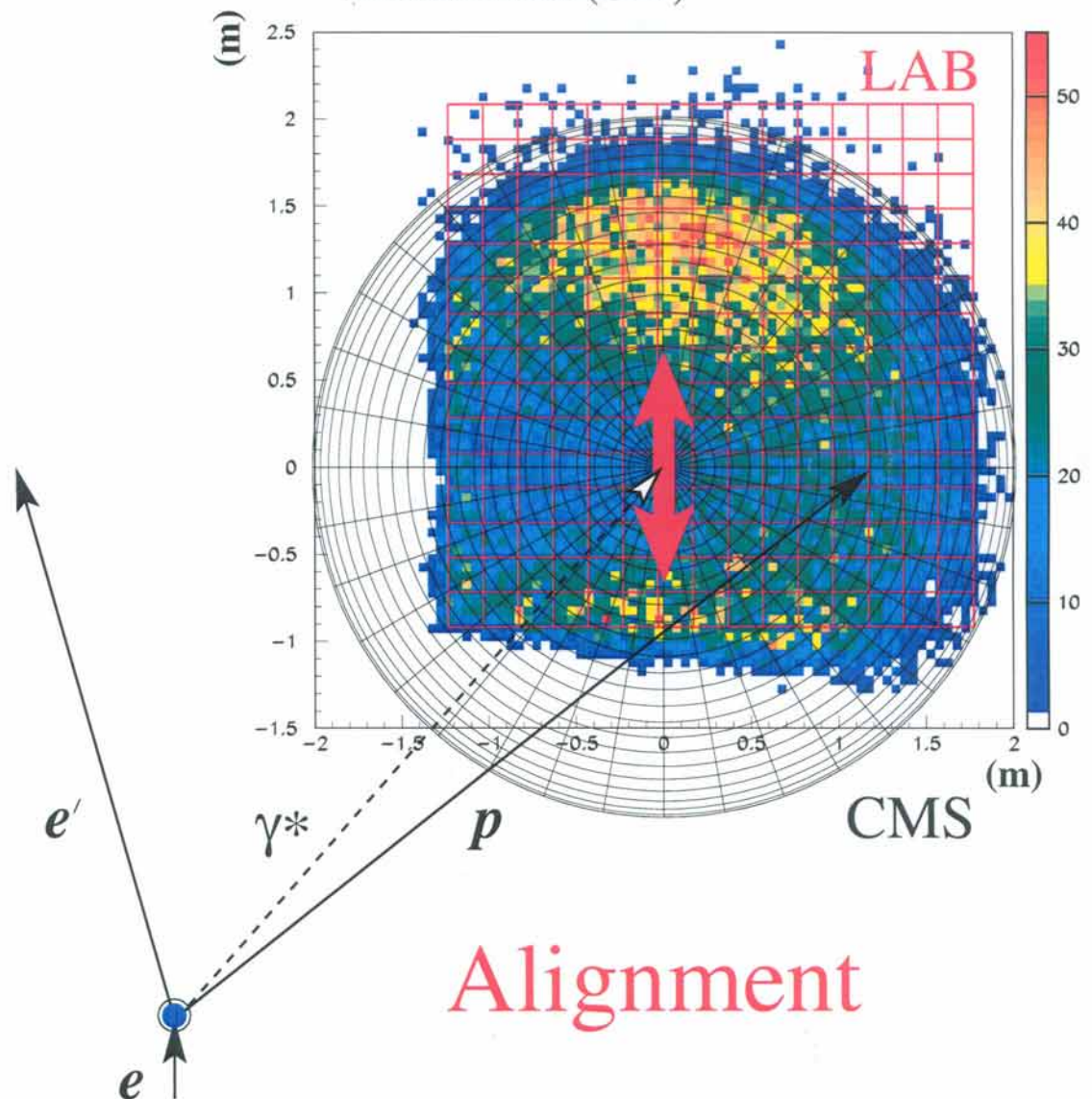
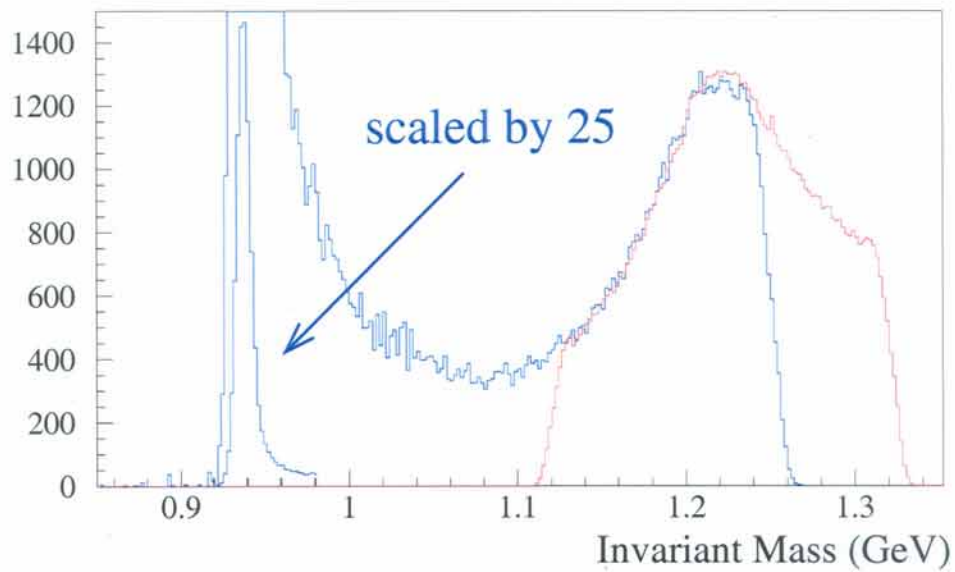
The ELAN Experiment



The ELAN Experiment



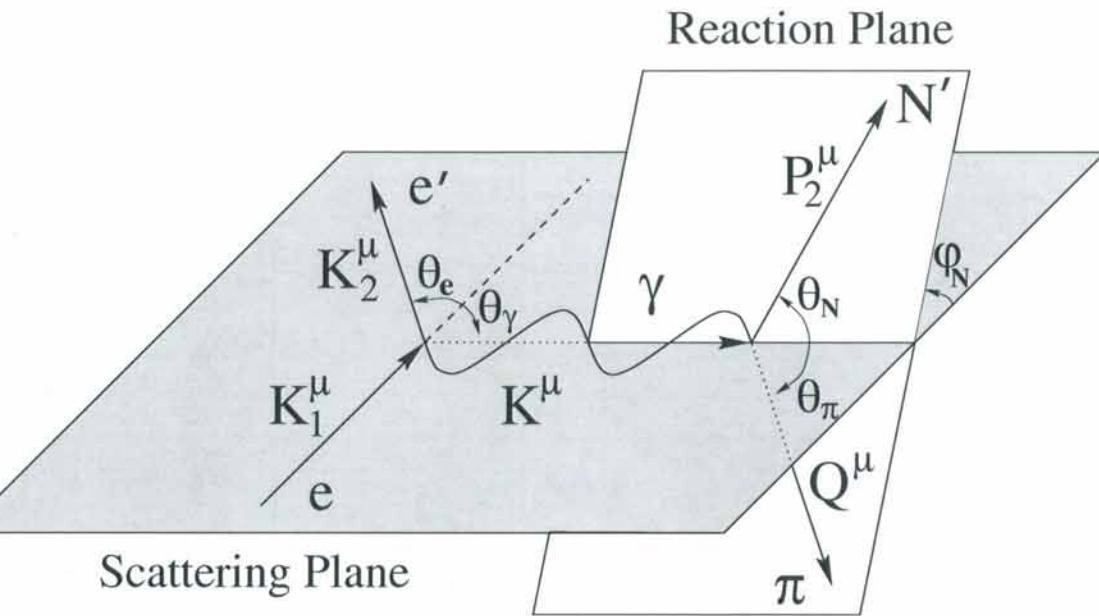
The ELAN Experiment



Alignment



Cross Section Decomposition



virtual photon flux

$$\frac{d^5 \sigma_v}{d\Omega_e dE'_e d\Omega^*} = \Gamma_v \frac{d^2 \sigma_v}{d\Omega^*}$$

hadronic cross section

linearly polarized photons

$$\frac{d^2 \sigma_v}{d\Omega^*} = \frac{|\vec{q}^*|}{k_\gamma^*} (R_T + \epsilon R_L + \sqrt{2\epsilon(1+\epsilon)} R_{LT} \cos \varphi + \epsilon R_{TT} \cos 2\varphi)$$

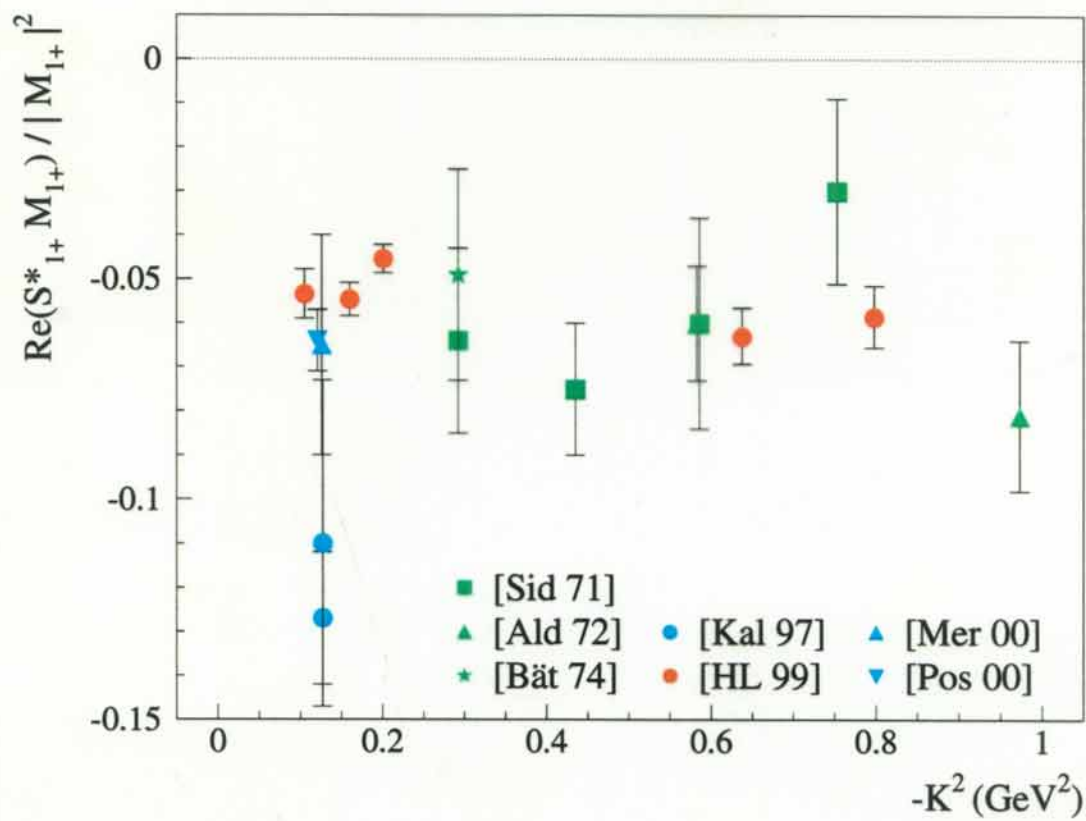
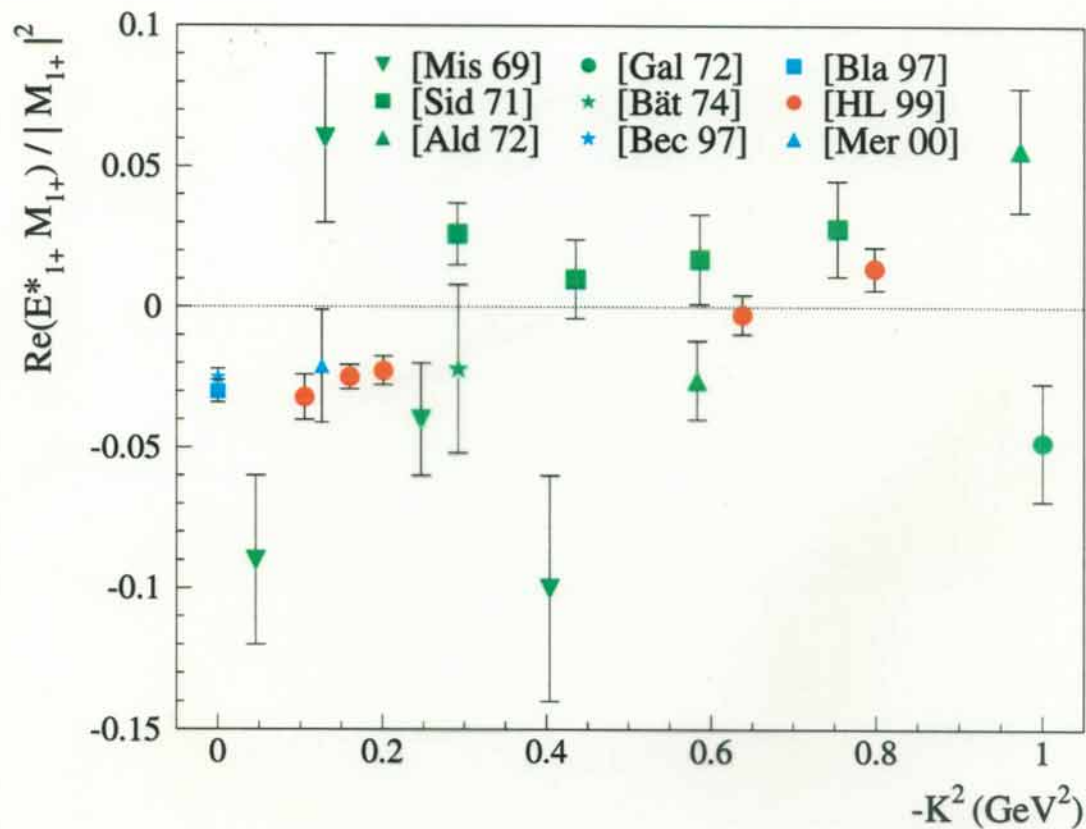
E_{1+}, M_{1+}

θ -dependence

S_{1+}

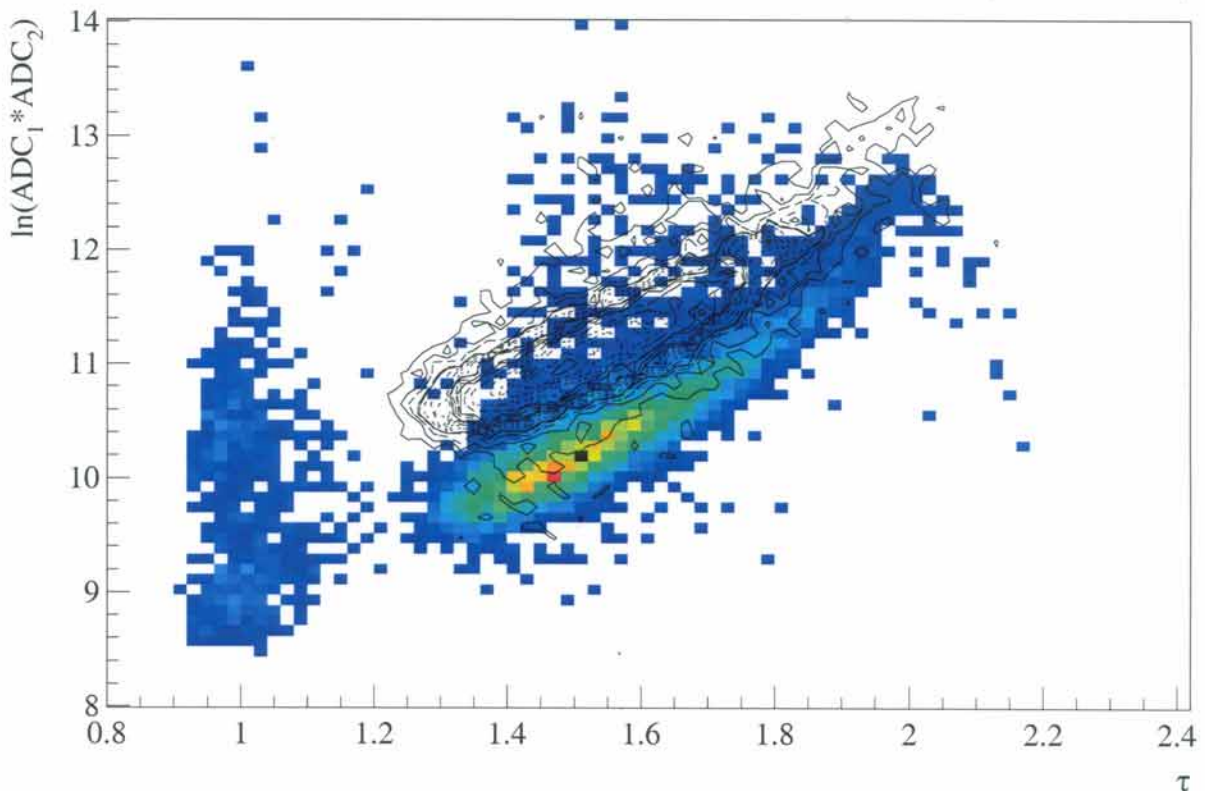
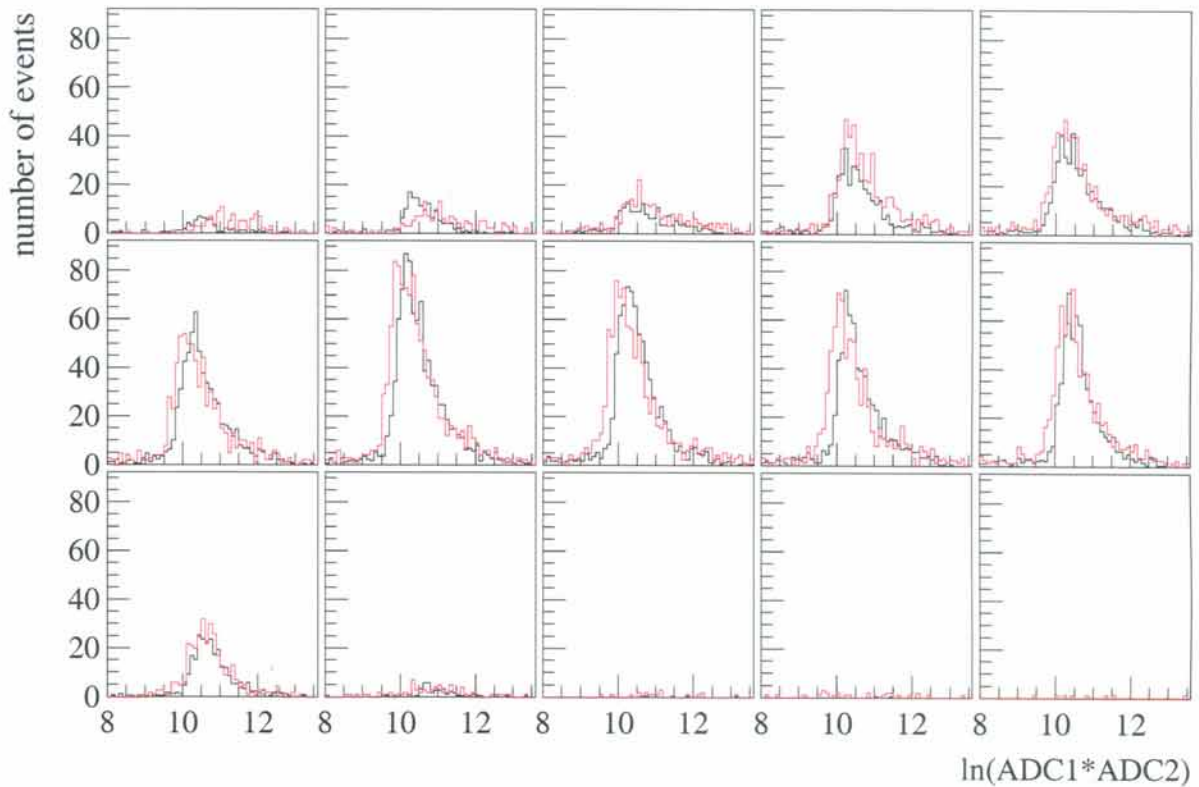
M_{1+}

Experimental Data Set



Monte-Carlo Simulation

$-K^2 = 0.638 \text{ (GeV}/c)^2$, $W = 1232 \text{ MeV}$, $\Delta W = \pm 10 \text{ MeV}$



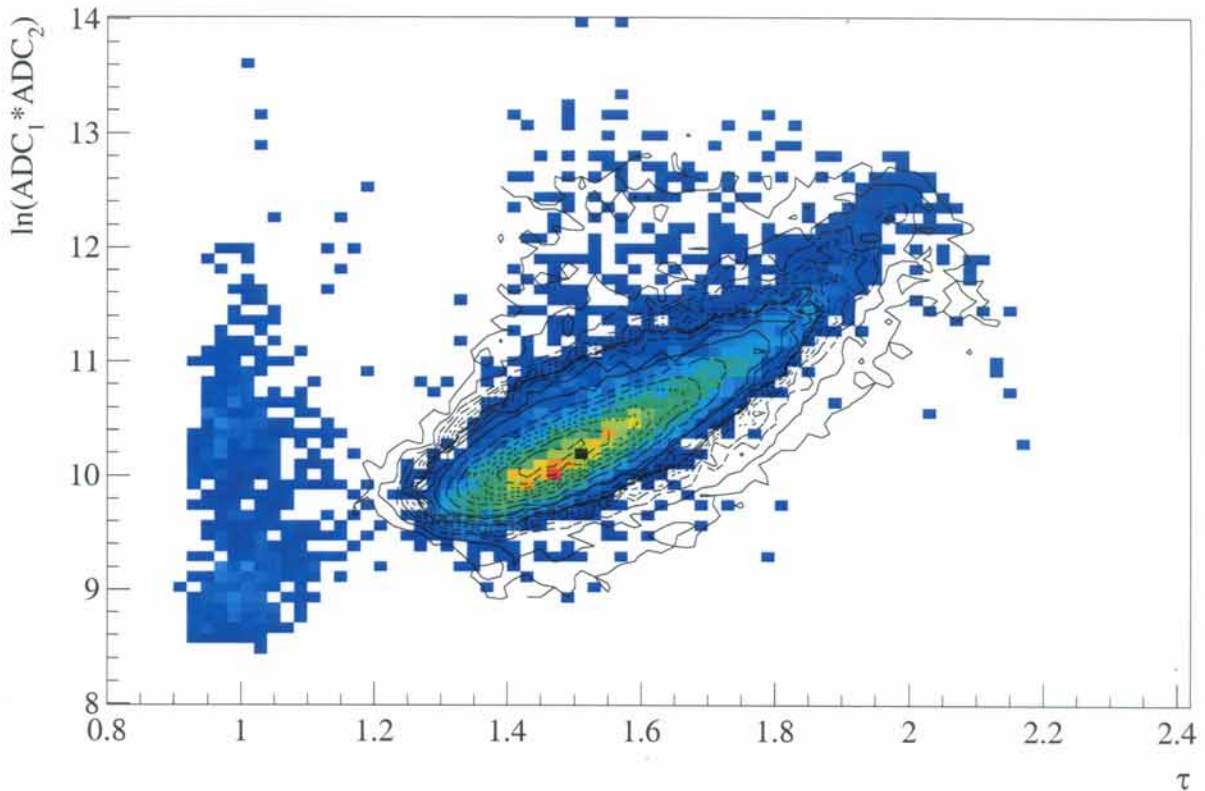
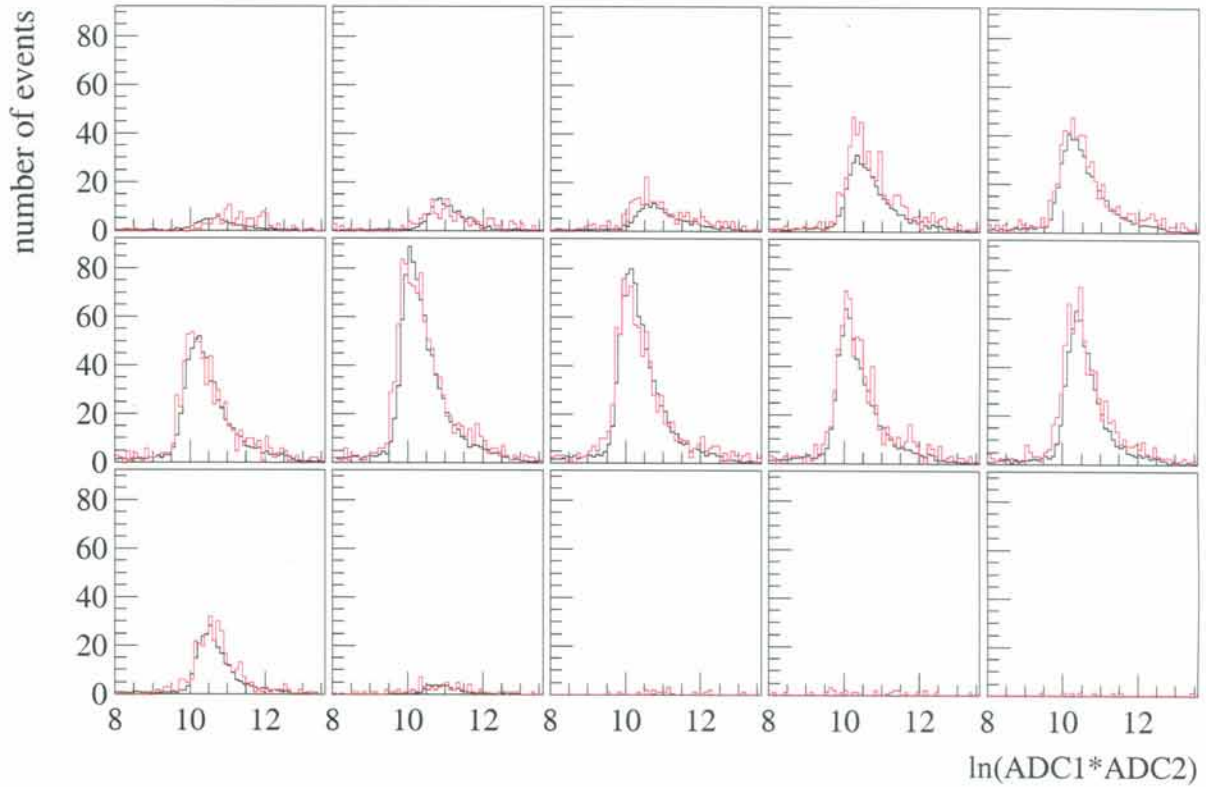
measured data

Monte-Carlo data



Adjusted Monte-Carlo Simulation

$-K^2 = 0.638 \text{ (GeV}/c)^2$, $W = 1232 \text{ MeV}$, $\Delta W = \pm 10 \text{ MeV}$



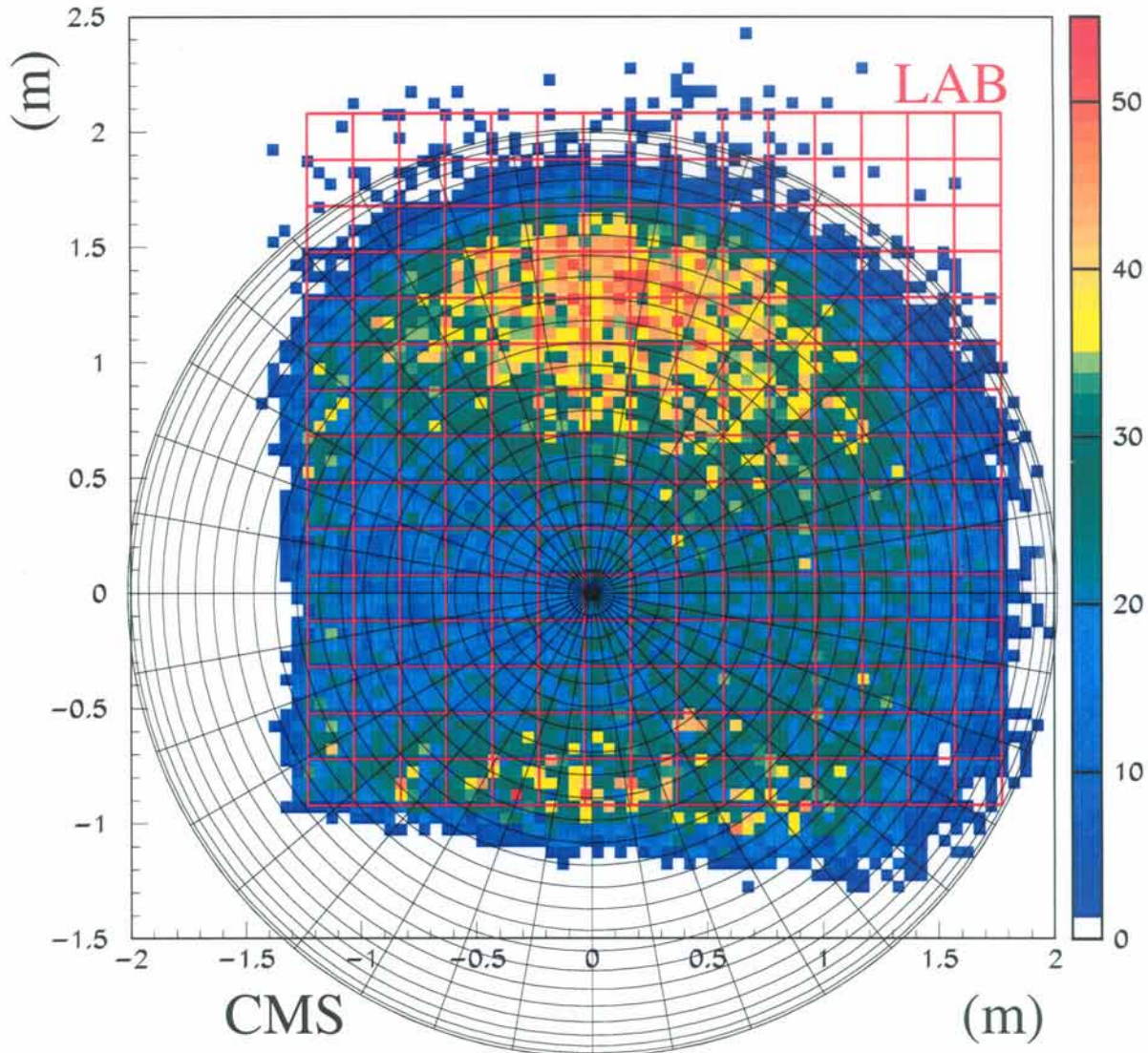
measured data

Monte-Carlo data



Kinematical Data Set

$10 K^2 * 7 W * 12 \theta * 36 \varphi$
 ~ 430
 ~ 3000
 ~ 30000



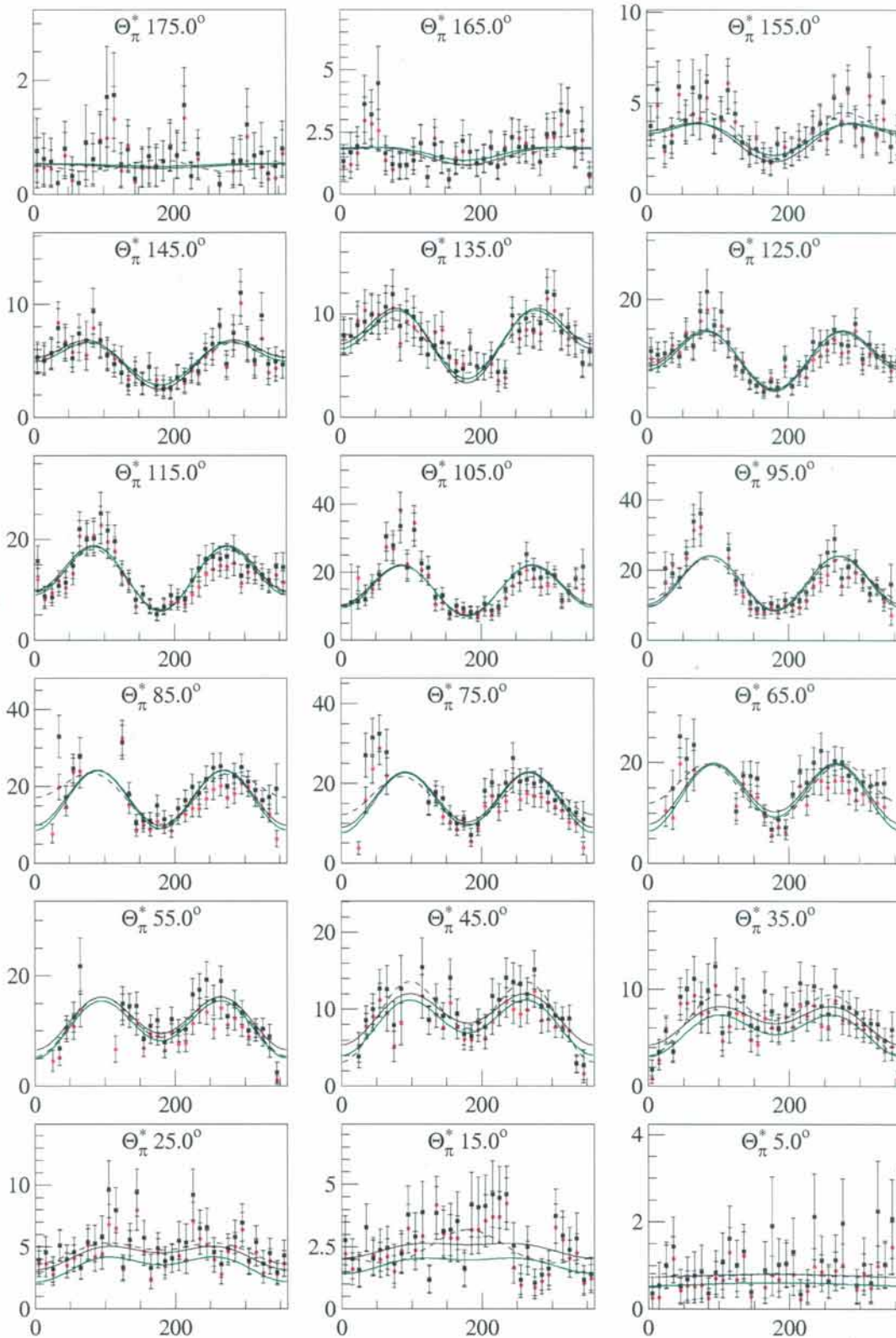
$-K^2 = 0.2 \text{ (GeV/c)}^2, W = 1232 \text{ MeV}, \Delta W = \pm 20 \text{ MeV}$



Proton- ϕ_π -Distributions

$-K^2 = 0.638 \text{ (GeV}/c)^2$, $W = 1232 \text{ MeV}$, $\Delta W = \pm 10 \text{ MeV}$

$d\sigma/d\Omega$ in ($\mu\text{b}/\text{sr}$)



measured data

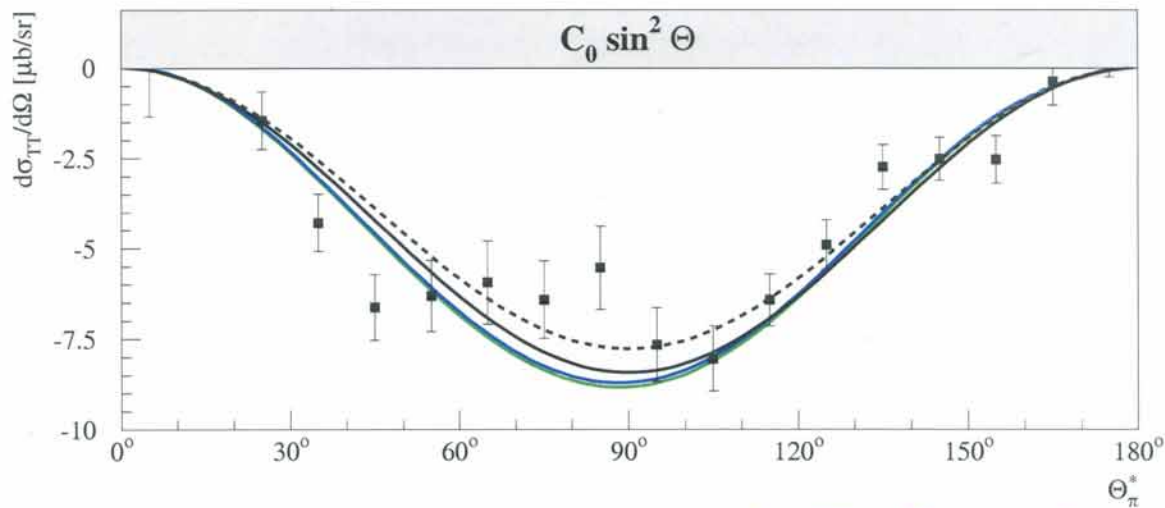
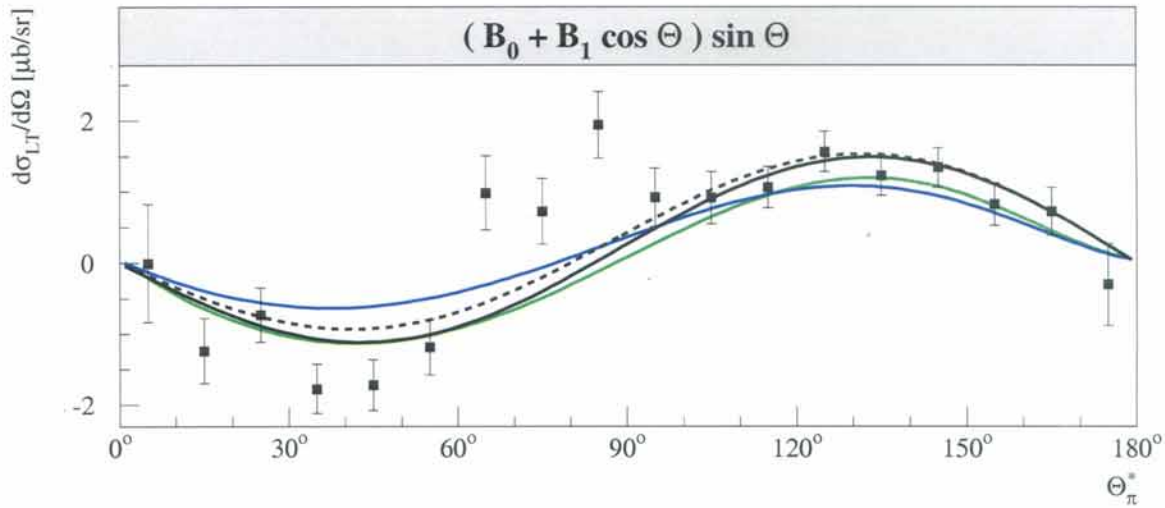
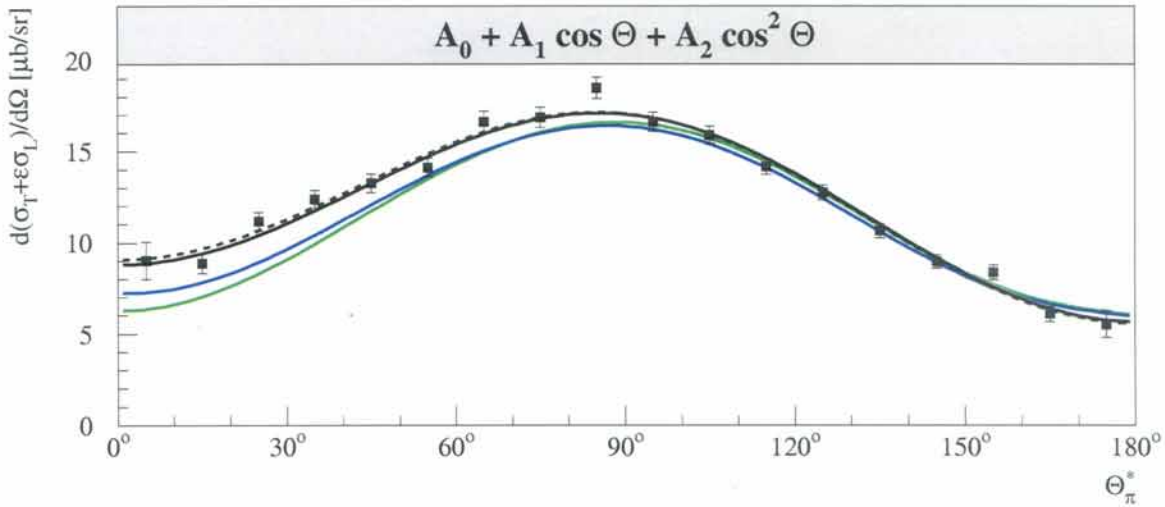
corrected data

— global in θ_π^*
 — local in θ_π^*
 - - - - MAID 2000
 —



$-K^2 = 0.638 \text{ (GeV/c)}^2$, $W = 1232 \text{ MeV}$, $\Delta W = \pm 10 \text{ MeV}$

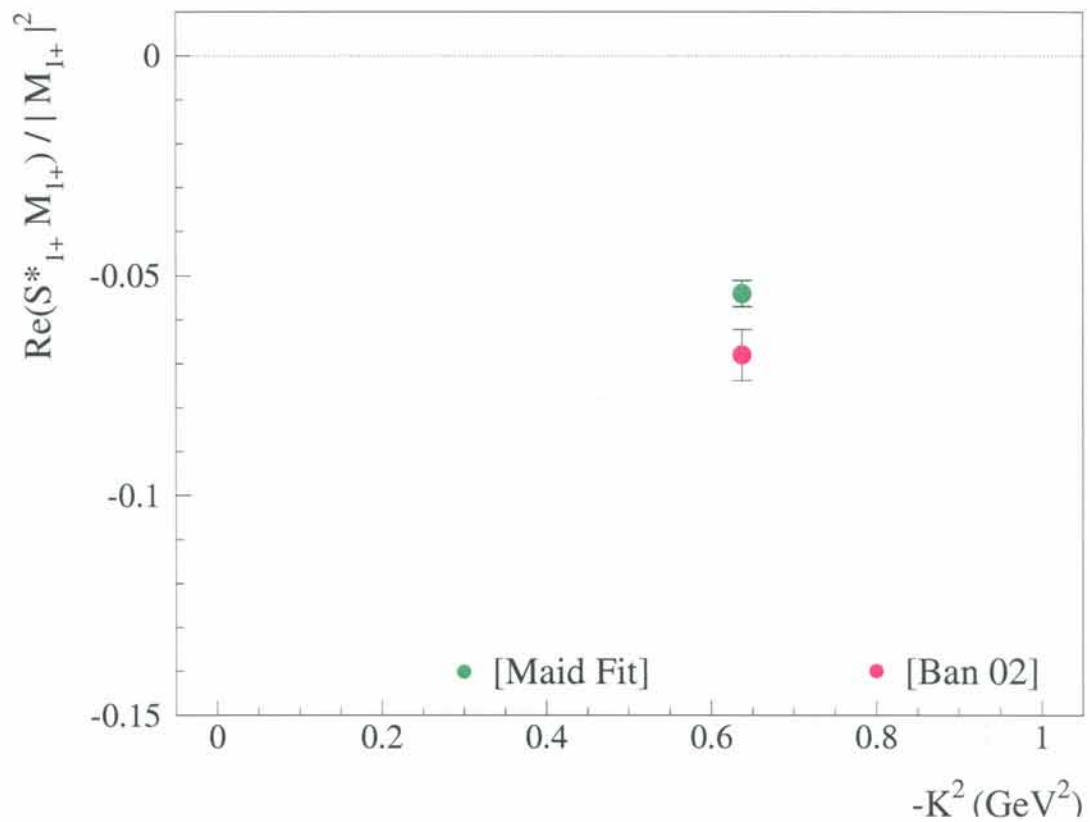
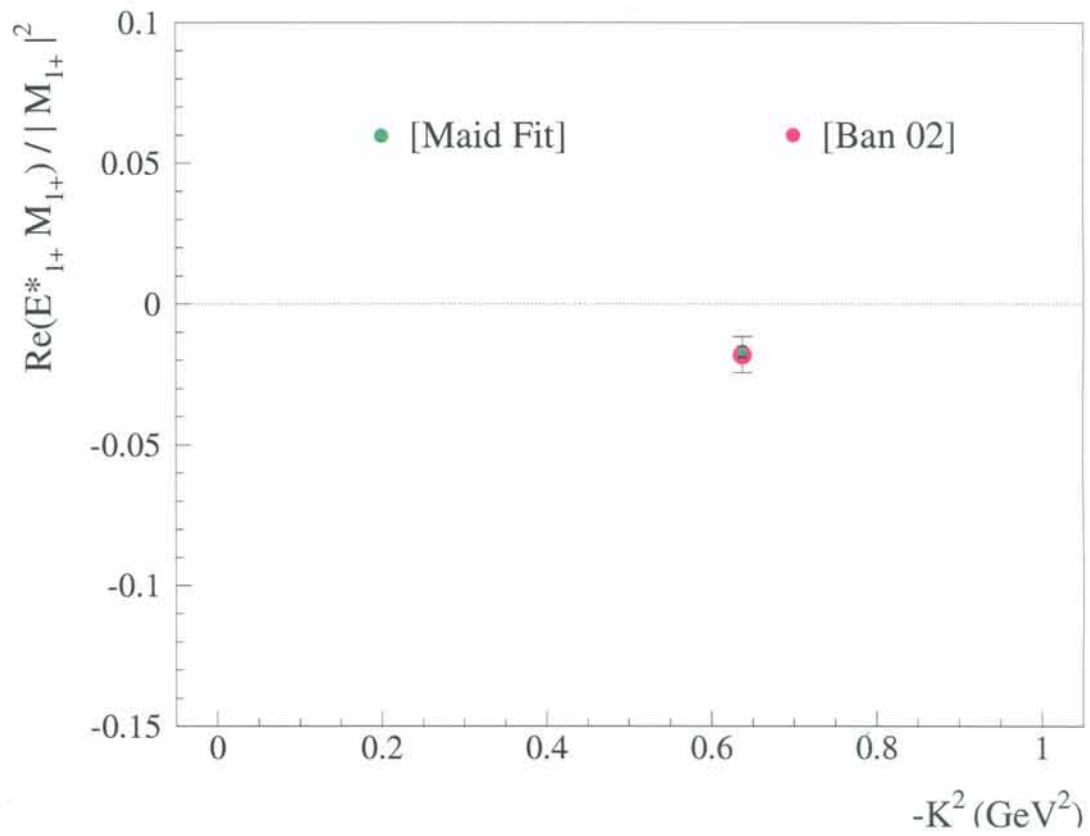
Proton- θ_π^* -Distributions



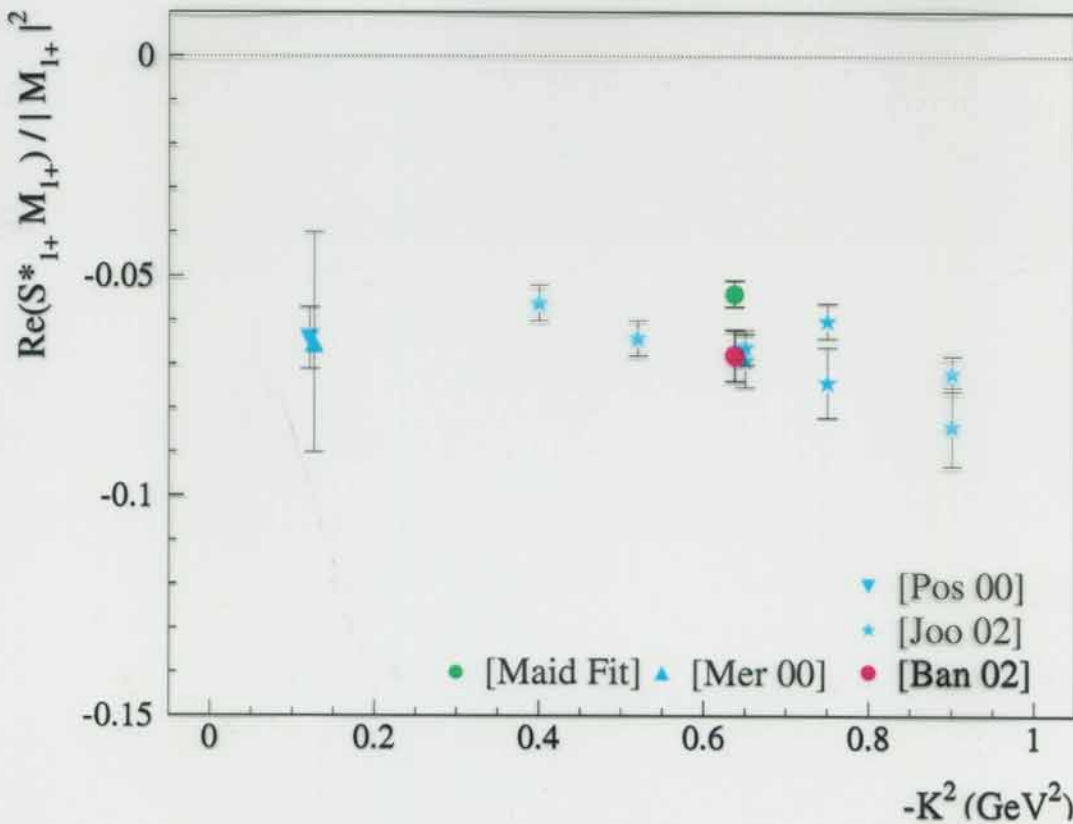
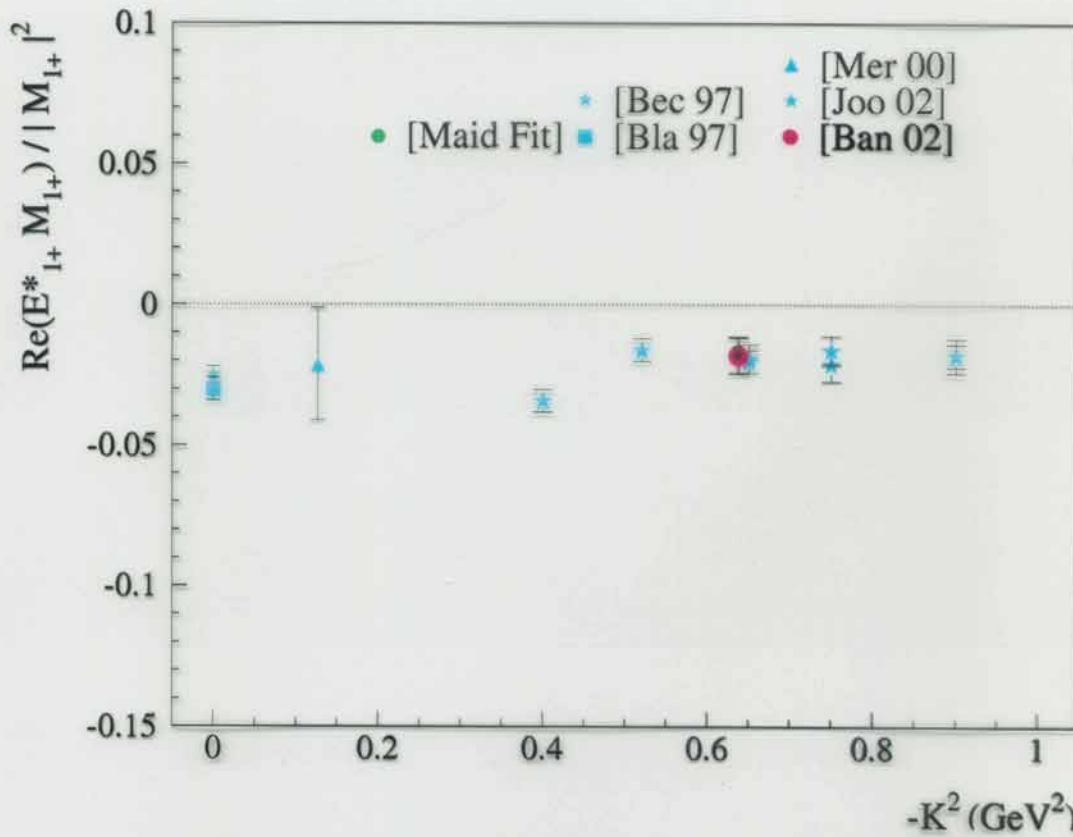
— MAID 2000 — MAID fit to data



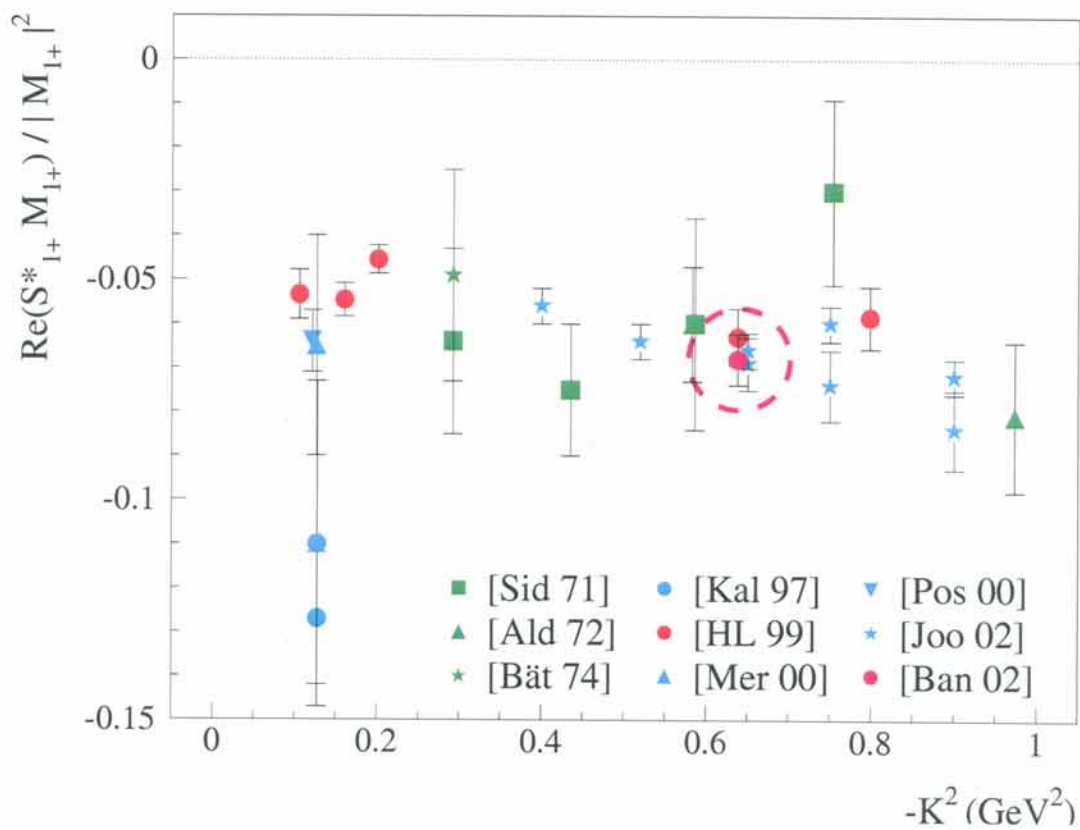
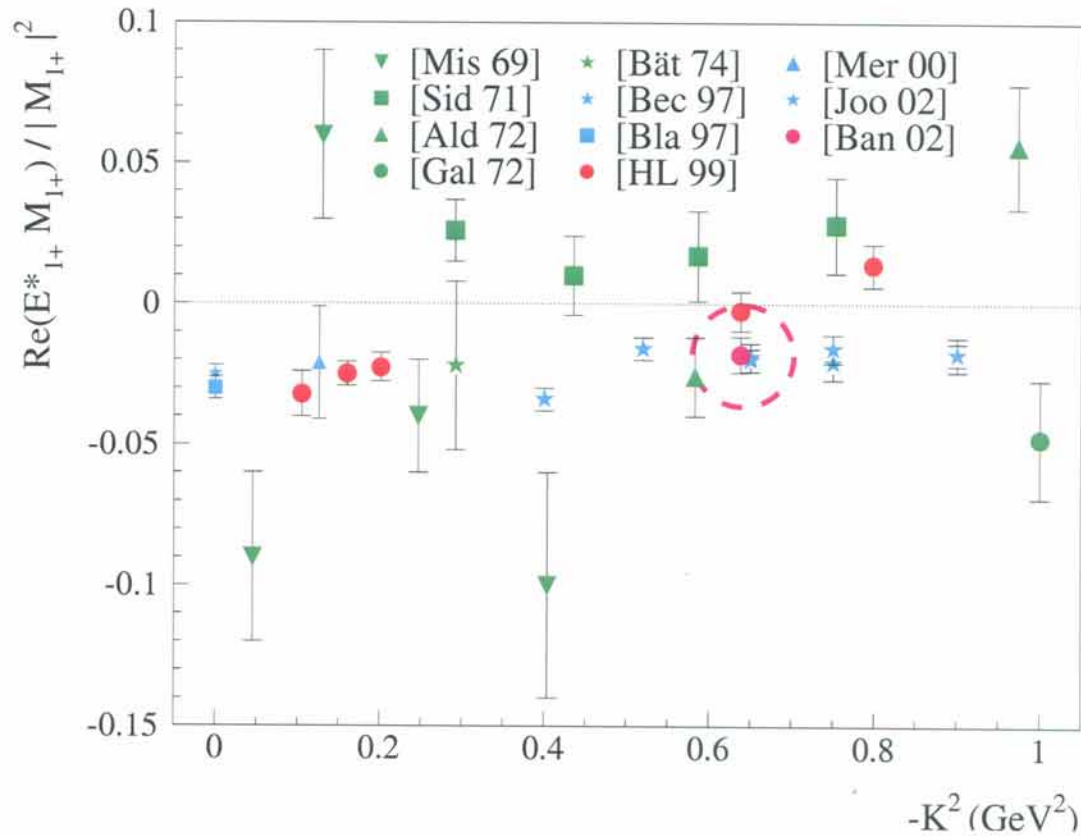
Experimental Data Set



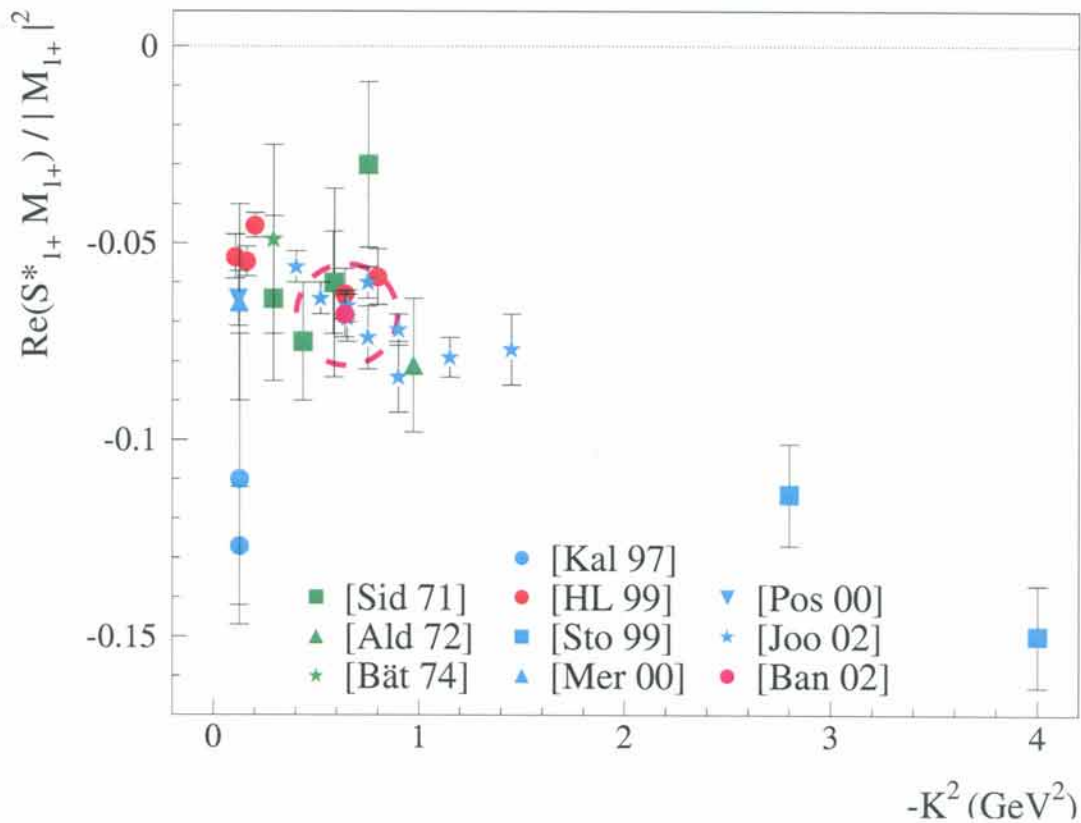
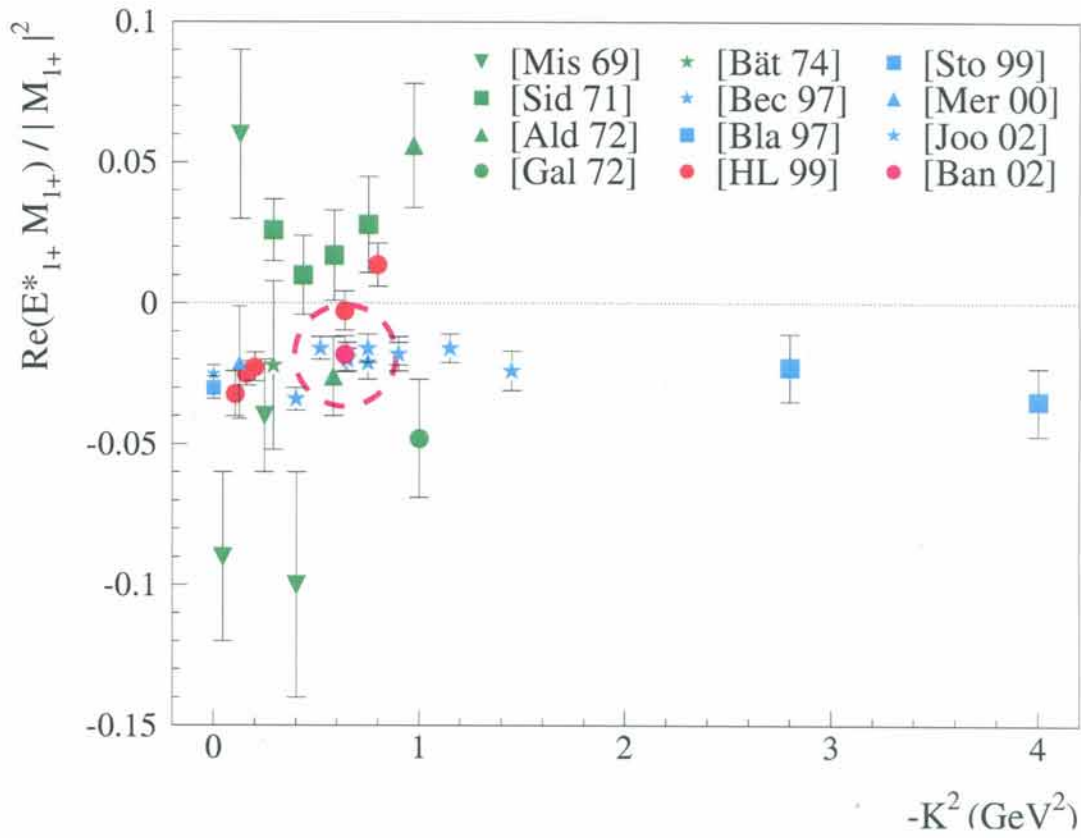
Experimental Data Set



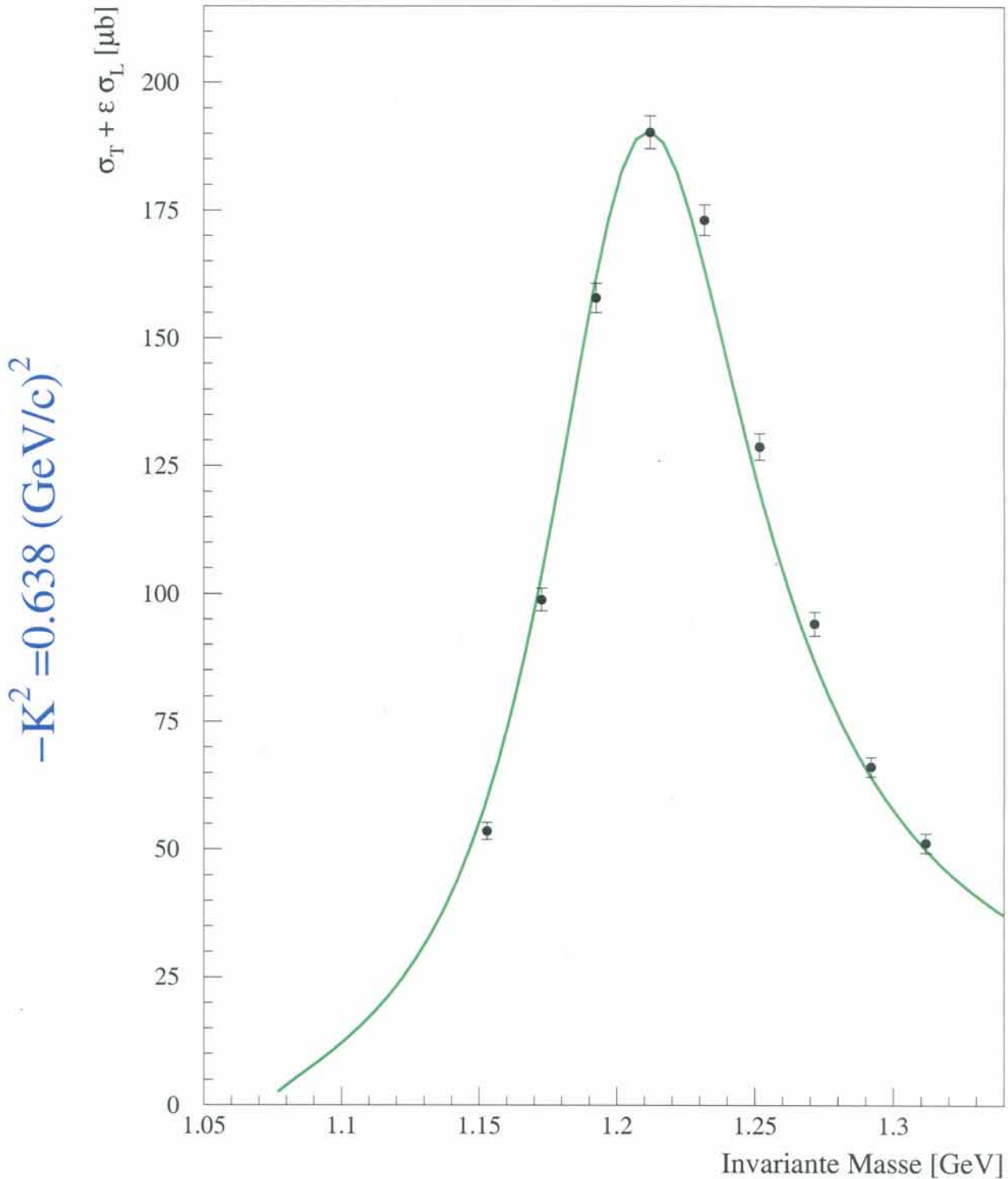
Experimental Data Set



Experimental Data Set



Total Cross Section



MAID 2000