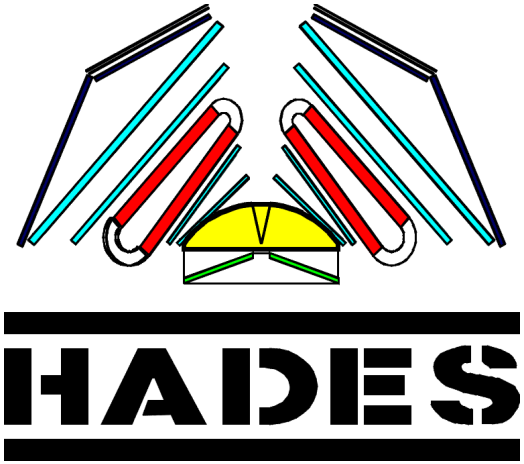


pp elastic scattering; pp@2.2GeV

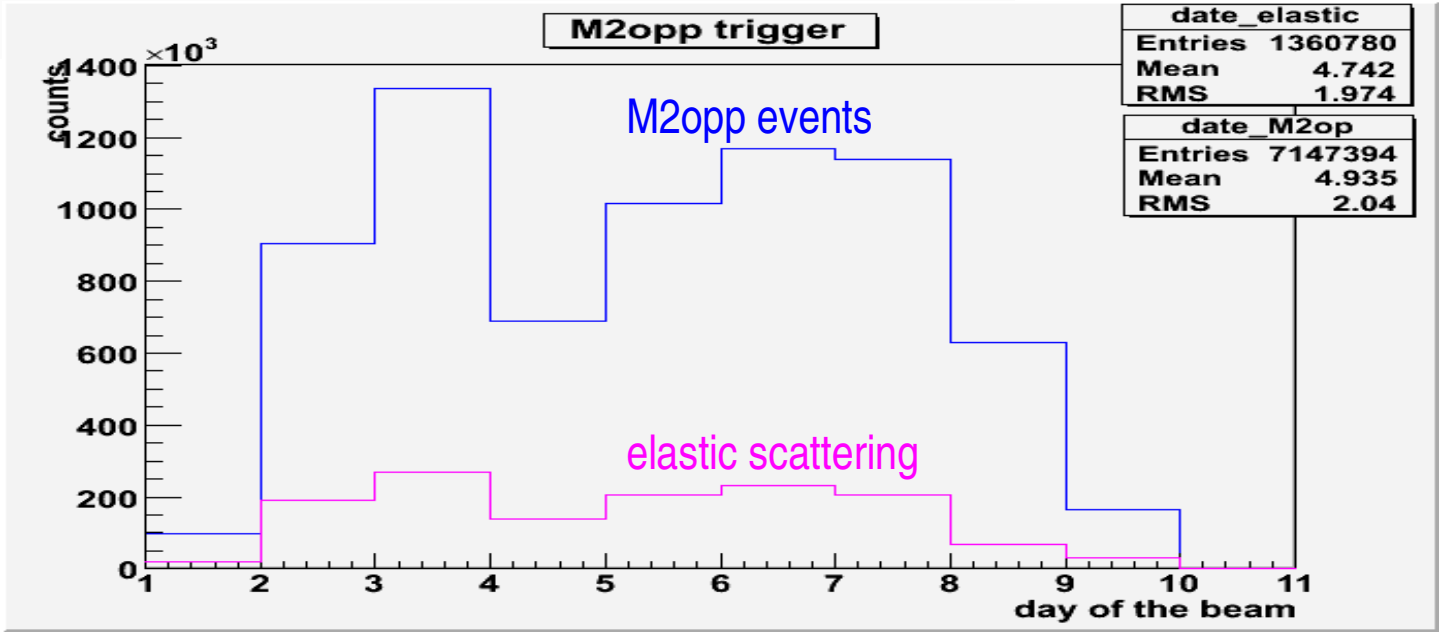
Marcin Wiśniowski, Jagiellonian University. Kraków

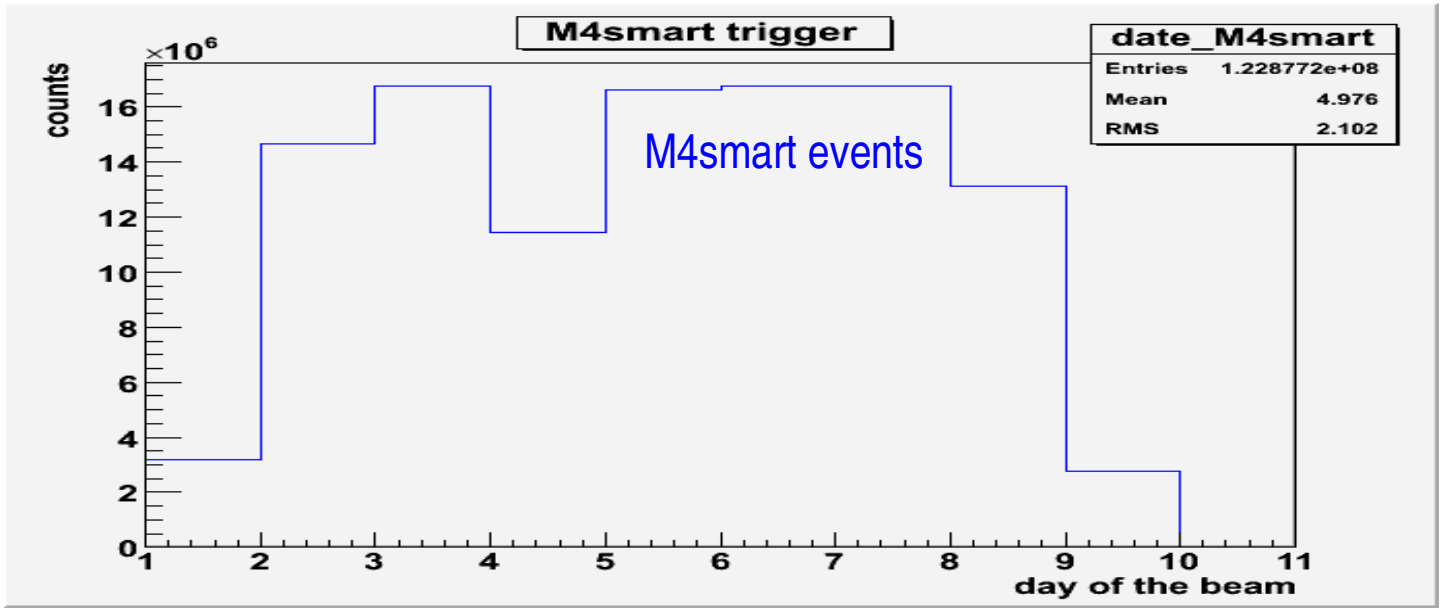
06.XII.2006 Kraków

Introduction

- *trigger info*
- *track selection*
- *particle identification*
- *pp elastic scattering for sim/exp*
- *study of HADES resolution for sim/exp*
- *summary*

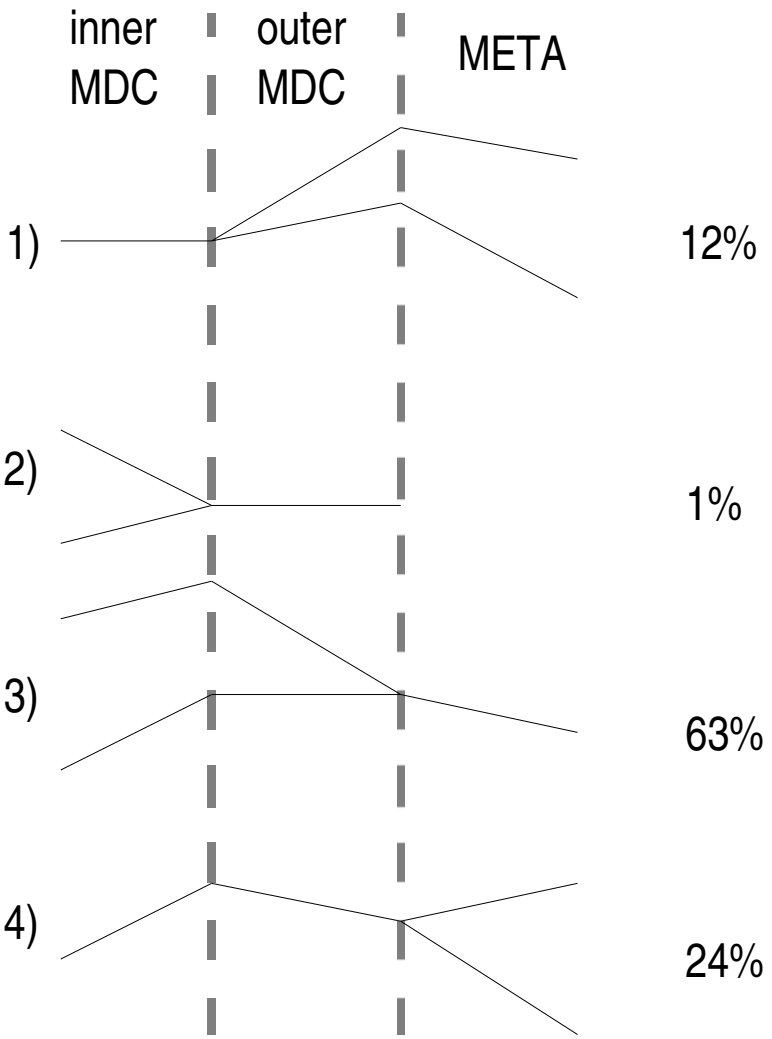
Trigger info





Track selection (jan04: pp@2.2GeV)

(use RKchi2 or MetaMatchingQual to choose better track if two share the same mdc/meta index)

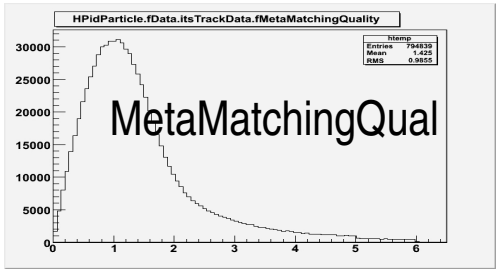


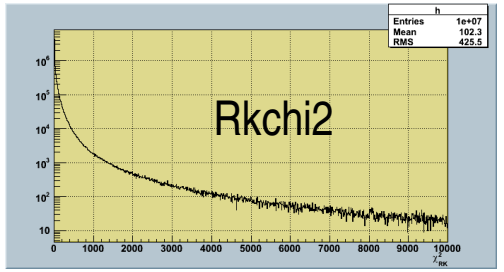
12%

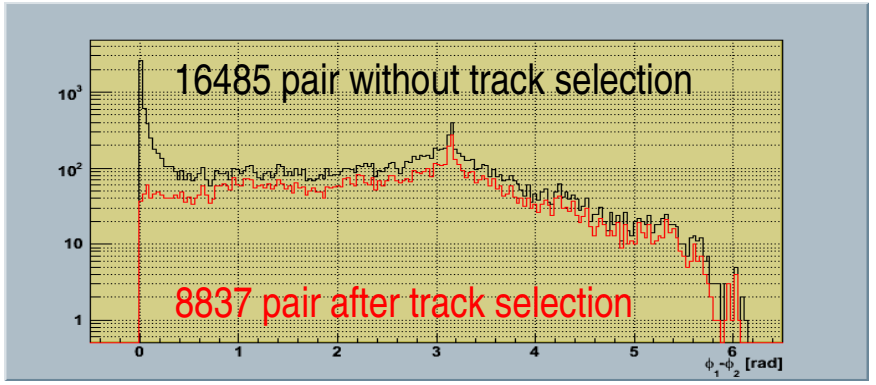
1%

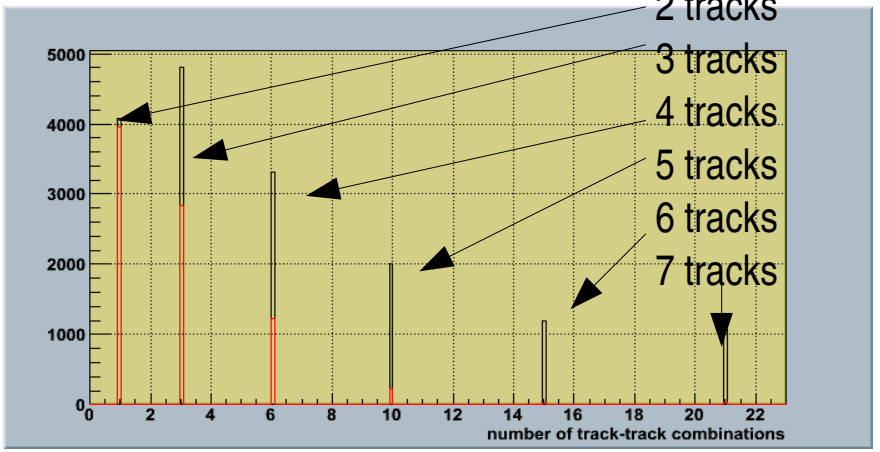
63%

24%



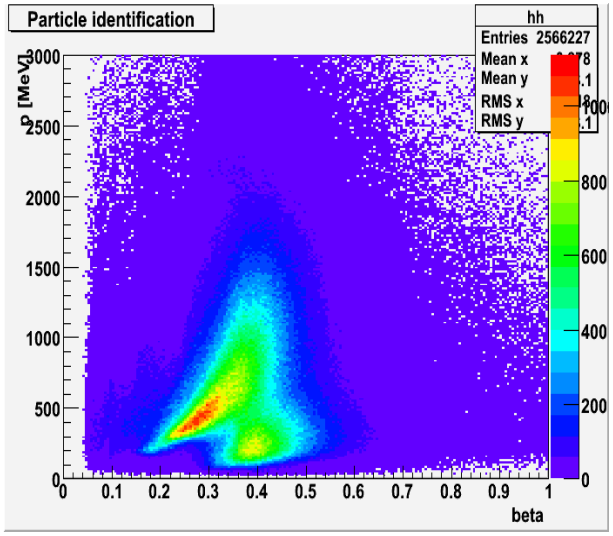


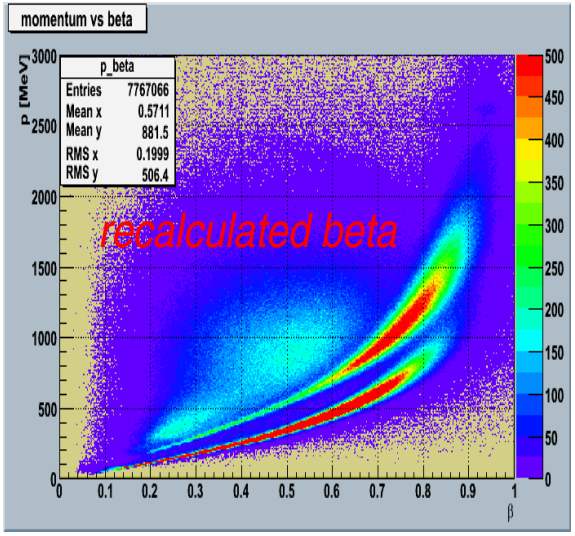




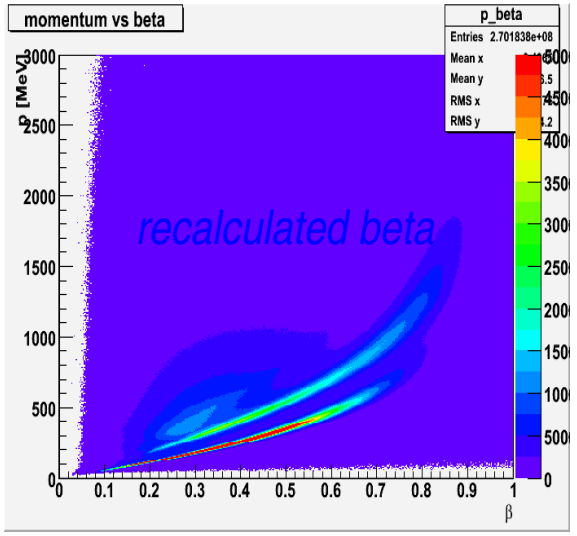
Momentum vs beta

simulation





experiment



β recalculculation

$dt = t_1 - t_2$;

$at = t_1^{th}(\mathbf{p}_1, id==14) - t_2^{th}(\mathbf{p}_2, id==14)$;

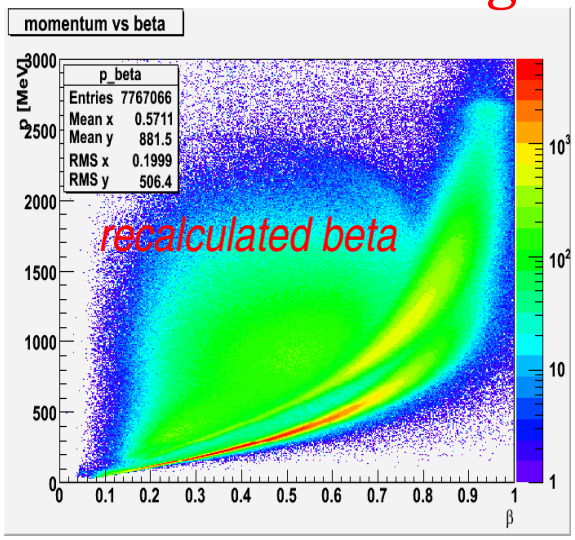
$t_1 = at/2 + dt/2$;

$t_2 = at/2 - dt/2$;

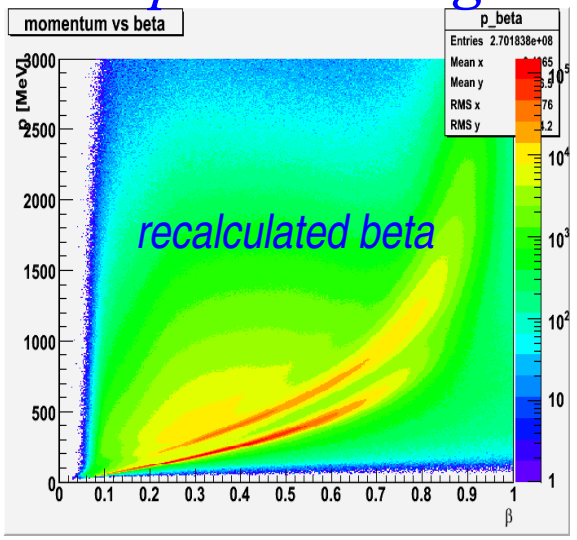
$\beta_1 = d_1/(c*t_1)$; // d - path lenght

$\beta_2 = d_2/(c*t_2)$;

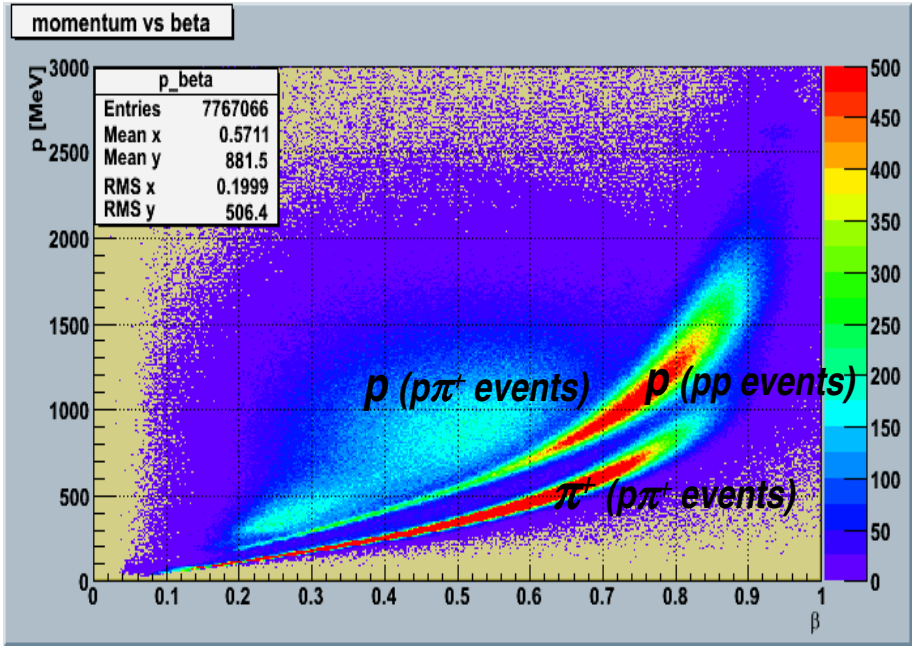
simulation logz

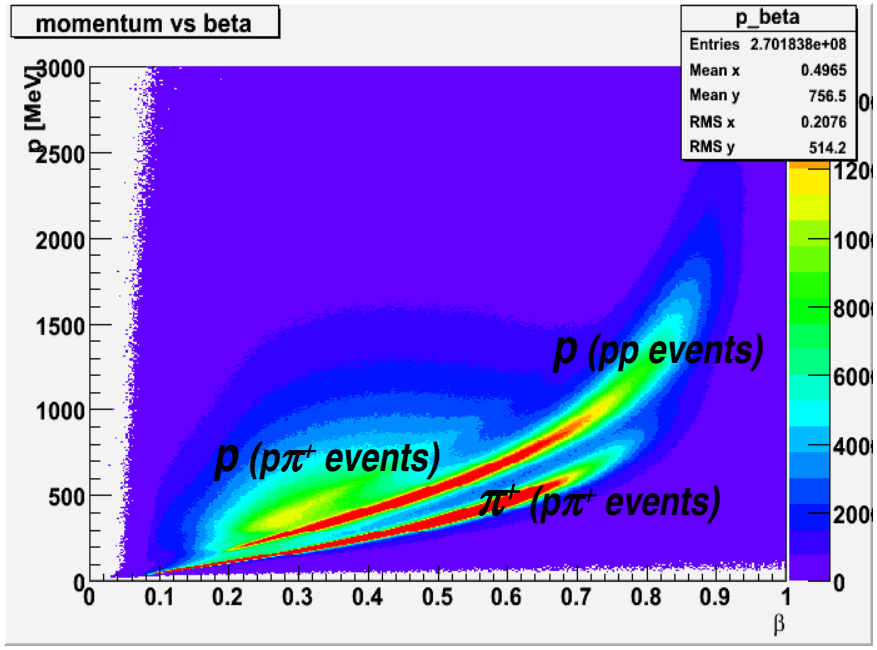


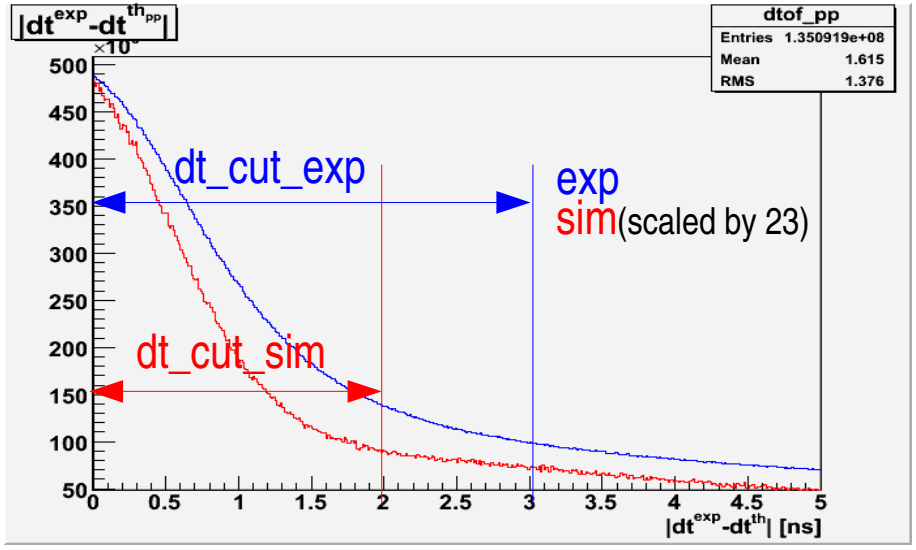
experiment logz



Proton identification





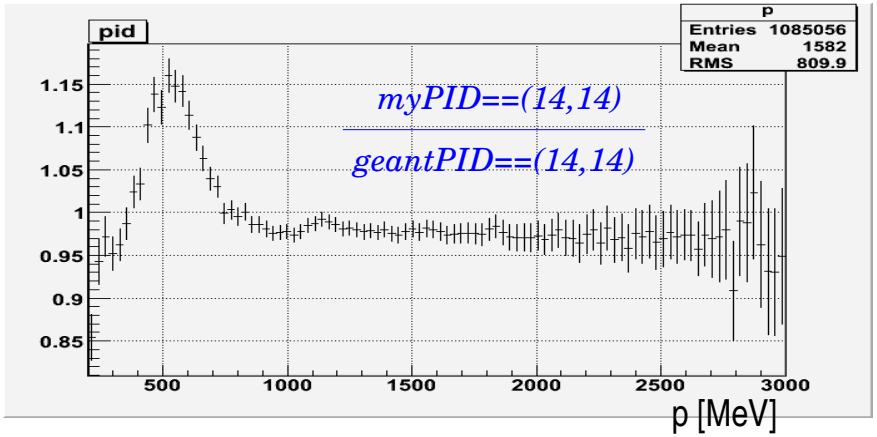


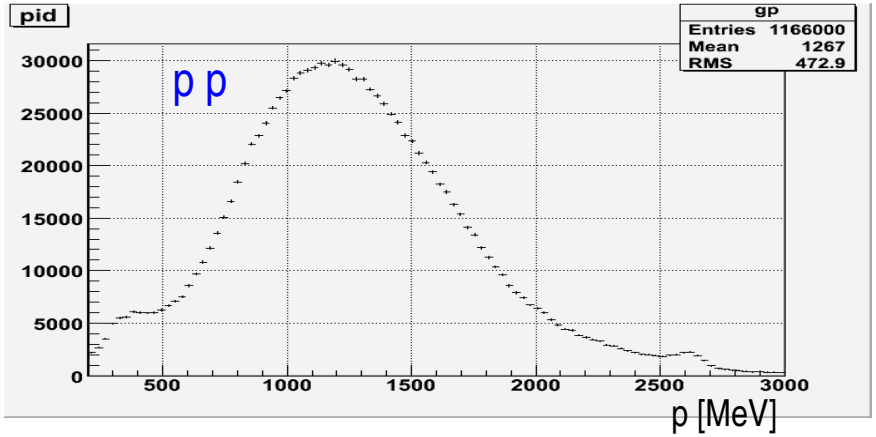
Proton identification (applied cuts)

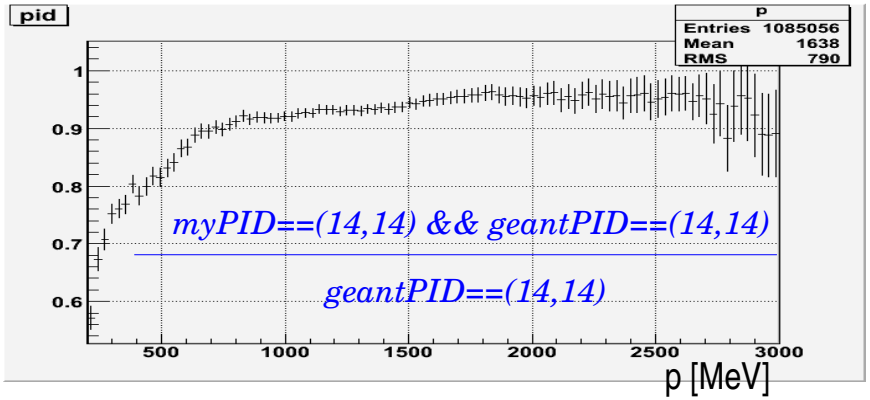
sim: momentum vs beta -> graphical cut
+ dt_cut_sim

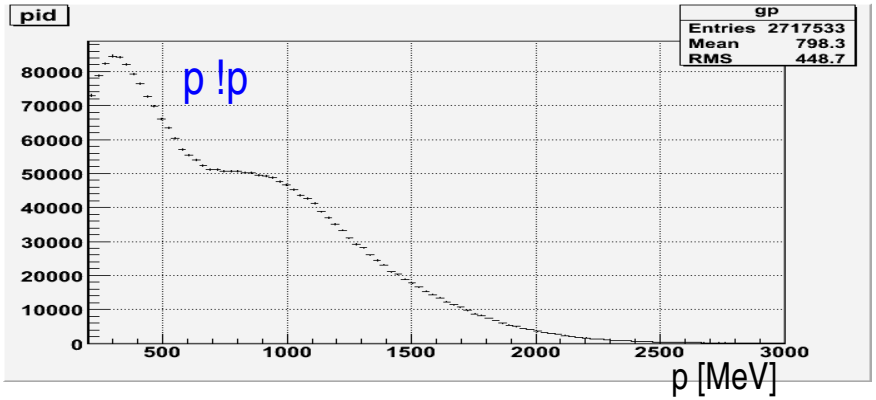
exp: momentum vs beta -> graphical cut
+ dt_cut_exp

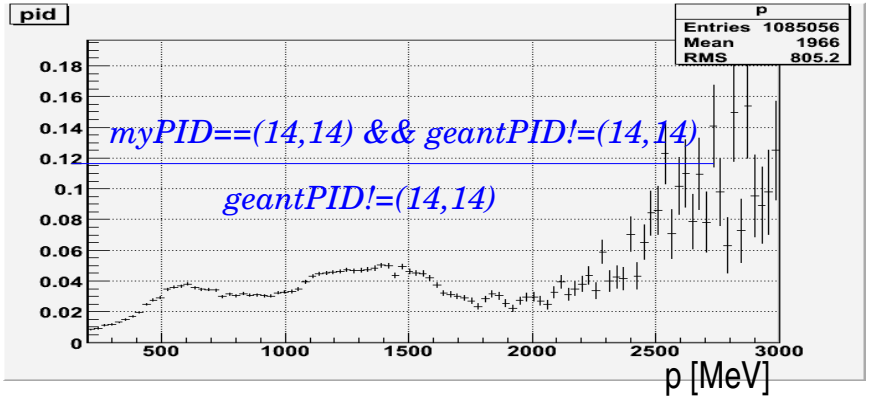
Proton identification

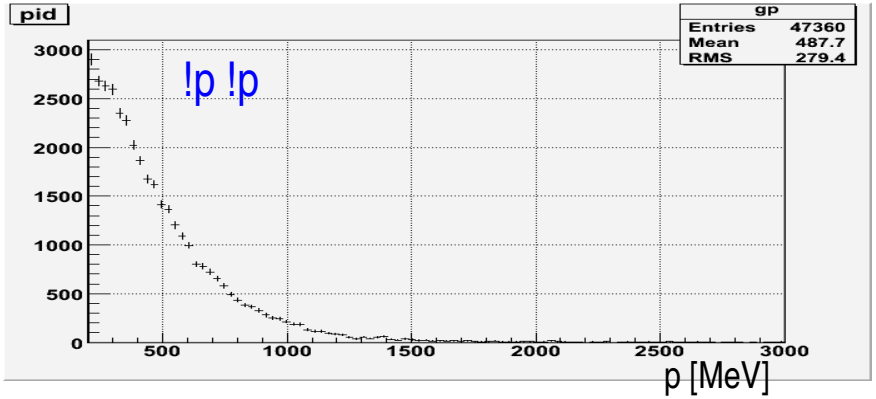




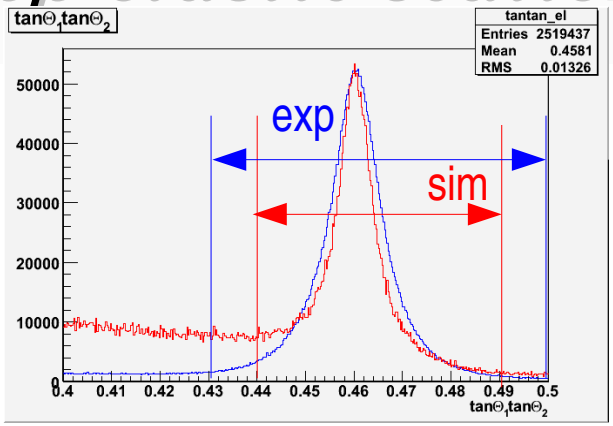


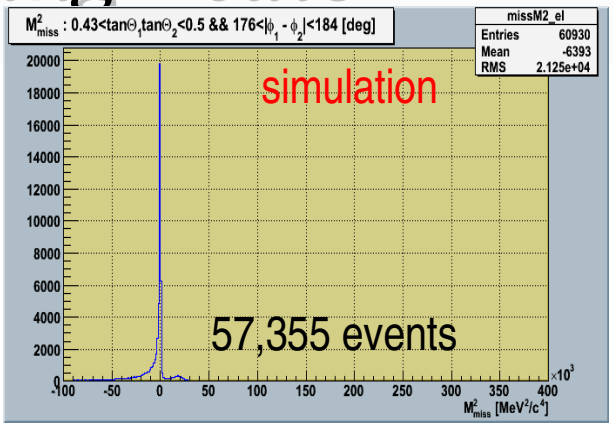


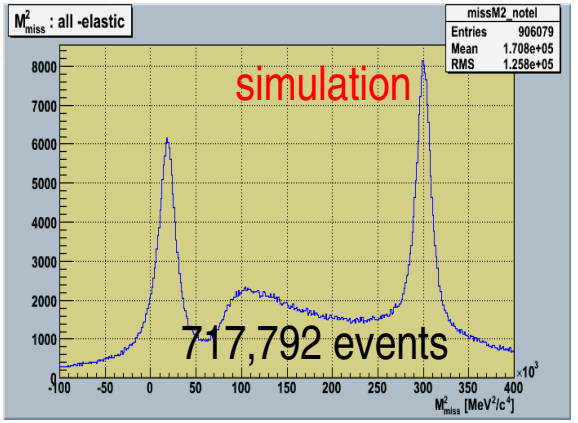


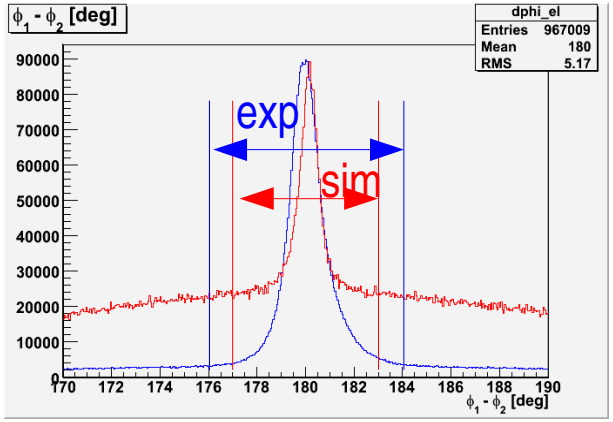


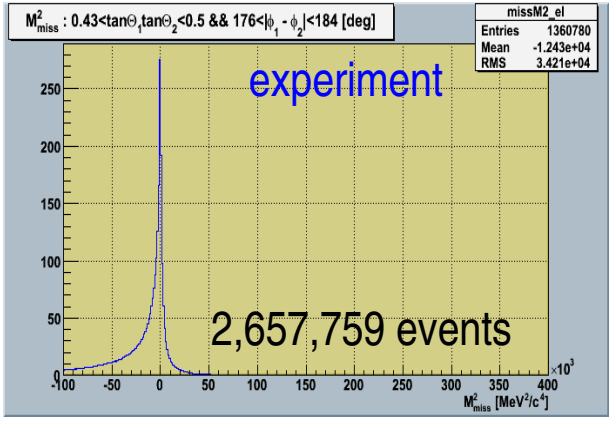
pp elastic scattering - cuts

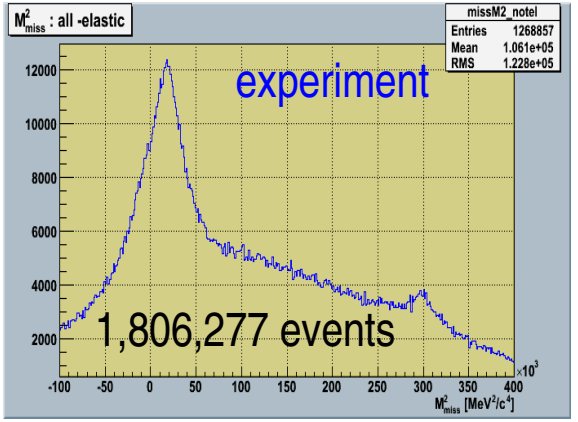












experiment - cuts:

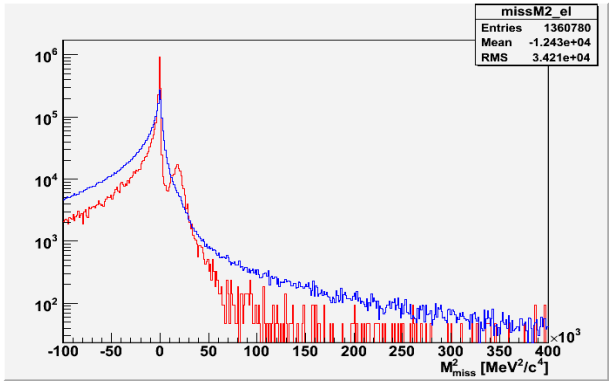
1) $\tan(\theta^1)\tan(\theta^2)\ \epsilon$ (0.43,0.50)

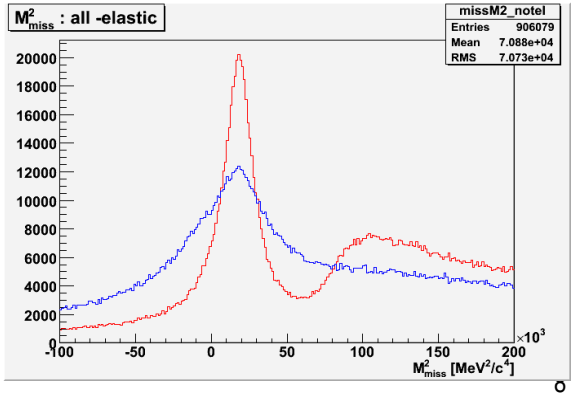
2) $|\phi^1-\phi^2|\ \epsilon$ (176^o,184^o)

simulation - cuts:

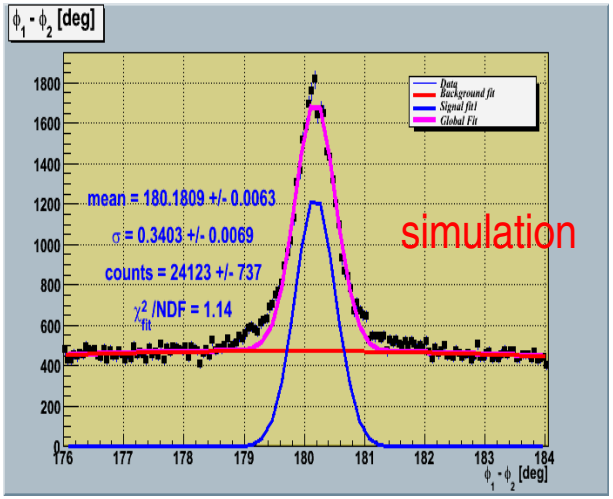
1) $\tan(\theta^1)\tan(\theta^2)\ \epsilon$ (0.44,0.49)

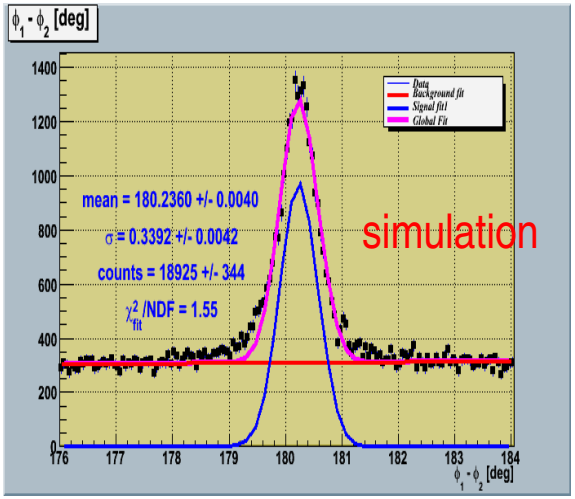
2) $|\phi^1-\phi^2|\ \epsilon$ (177^o,183^o)

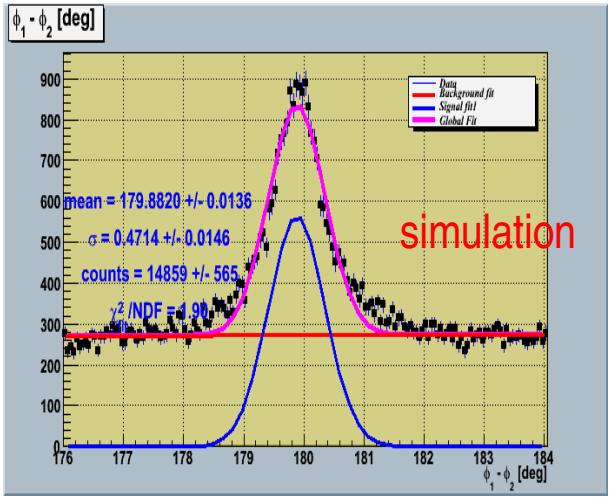


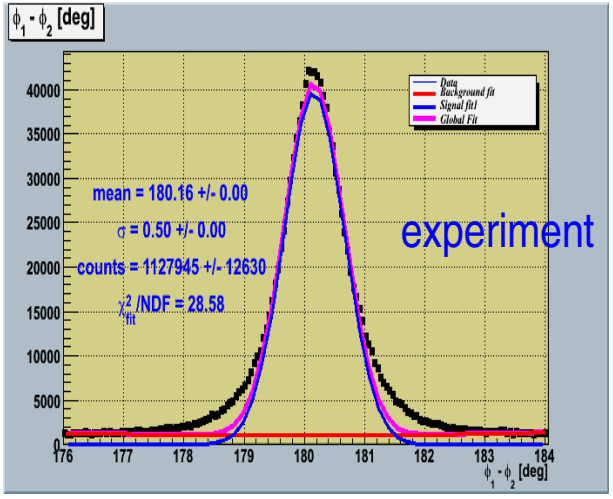


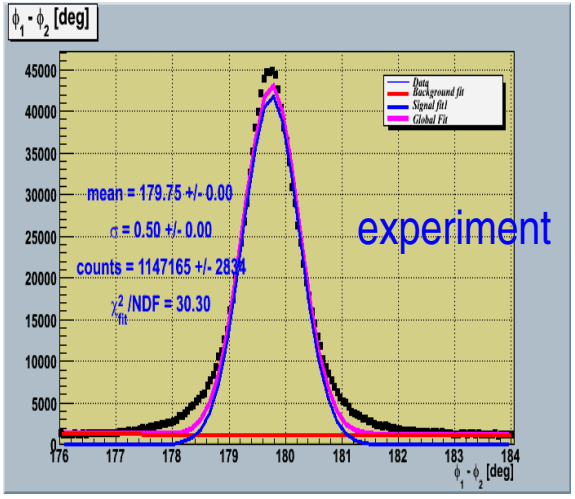
$|\phi_1 - \phi_2|$ simulation / experiment

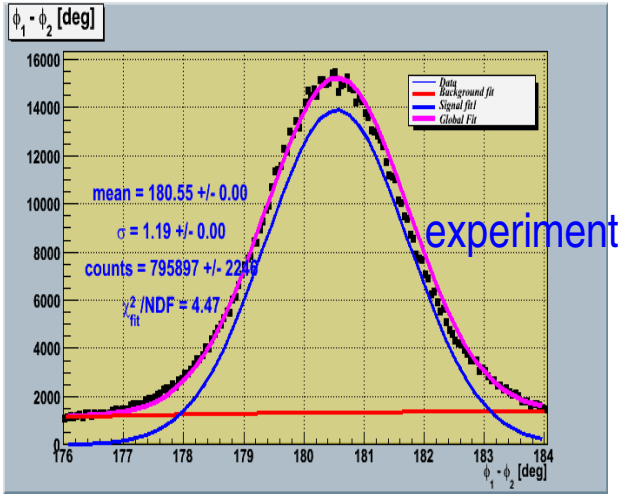




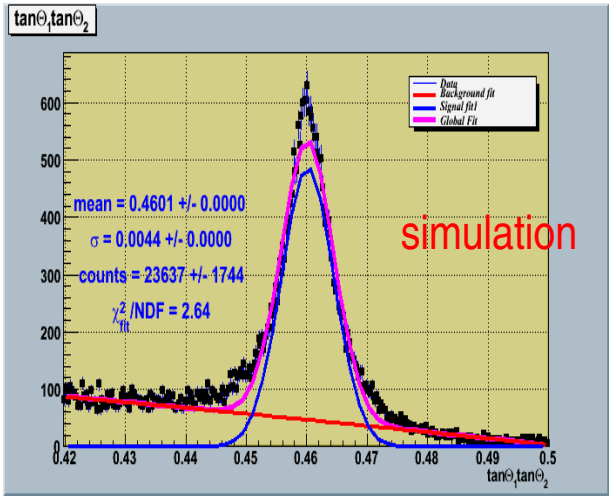


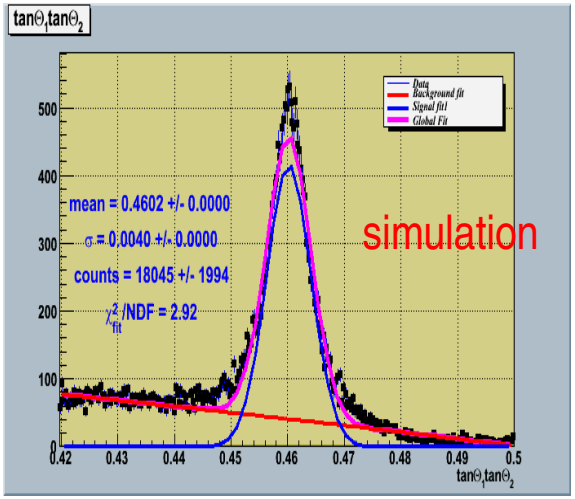


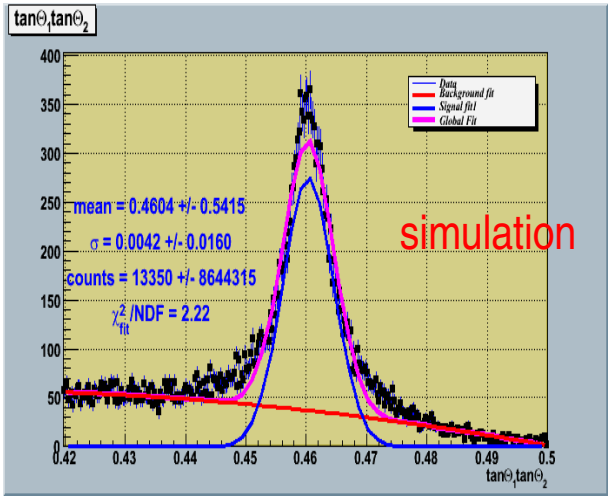


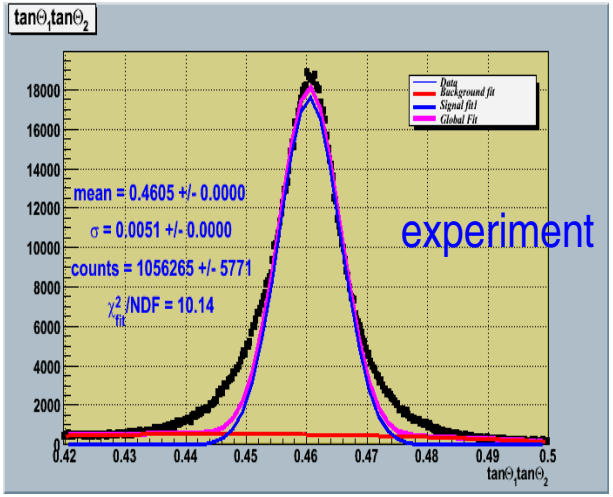


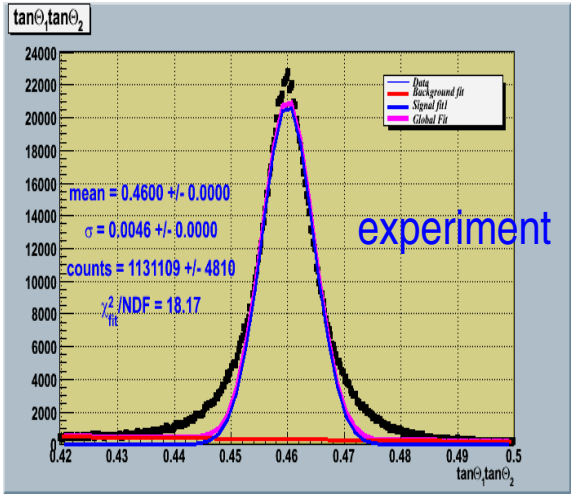
$\tan\theta_1 \tan\theta_2$ simulation / experiment

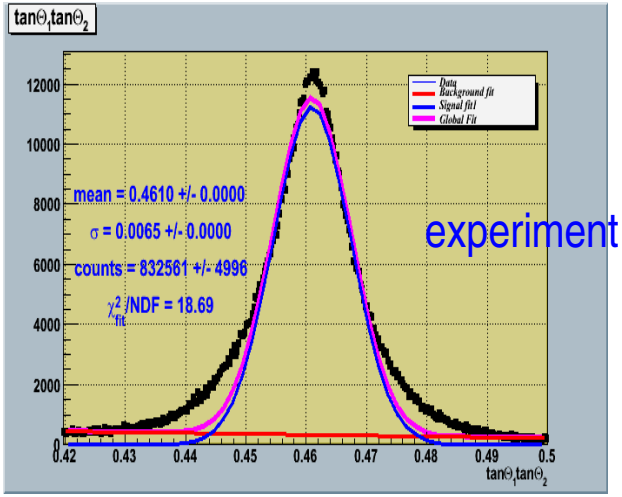




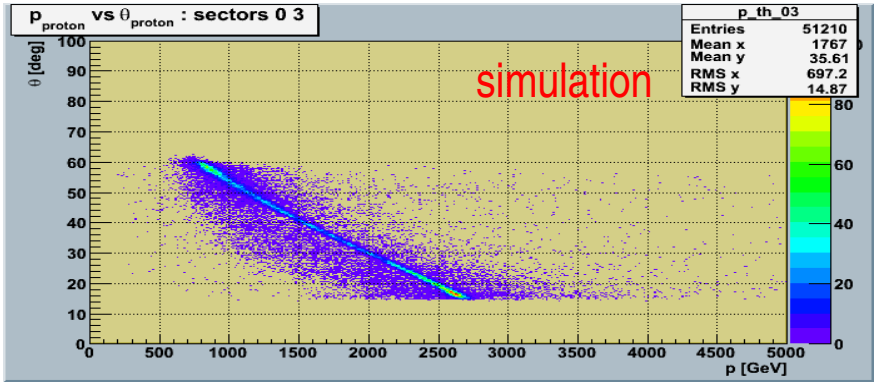


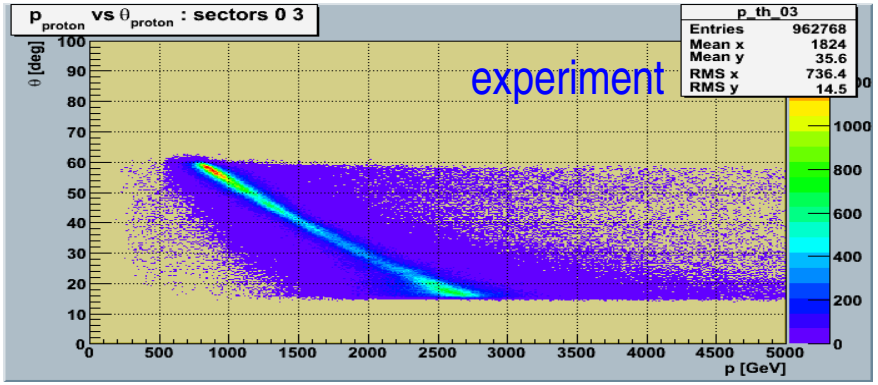


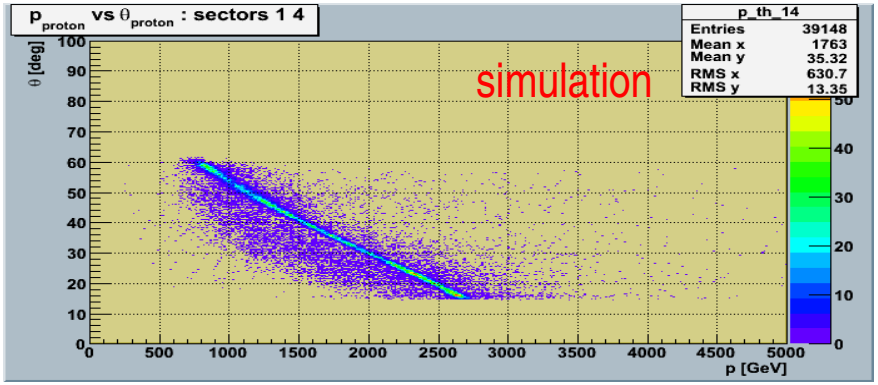


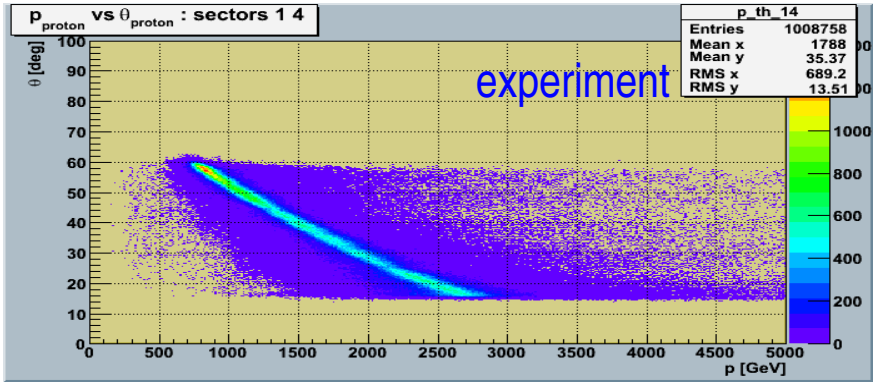


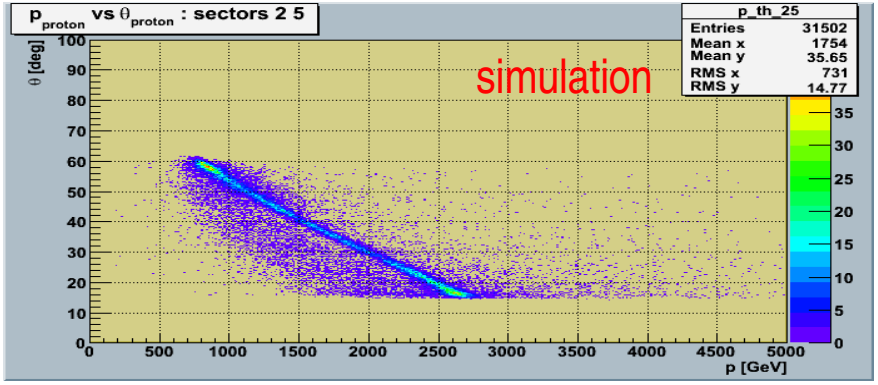
p vs θ simulation / experiment

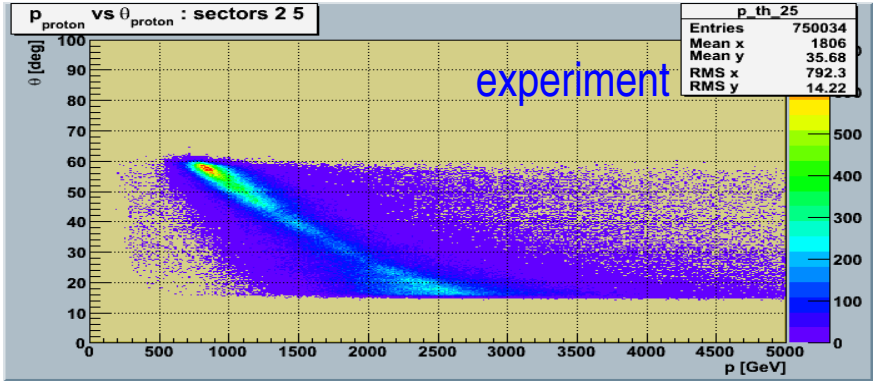




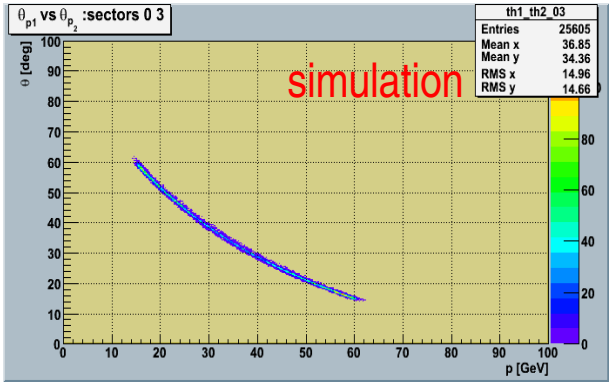


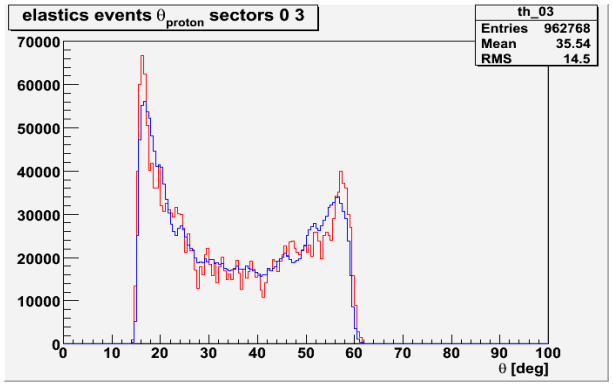


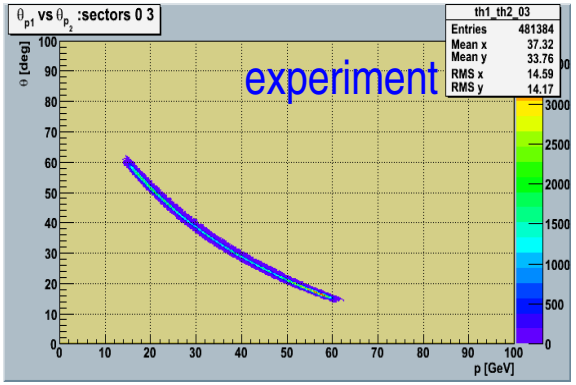


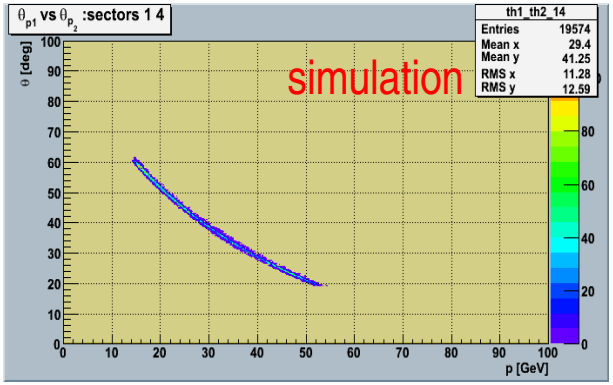


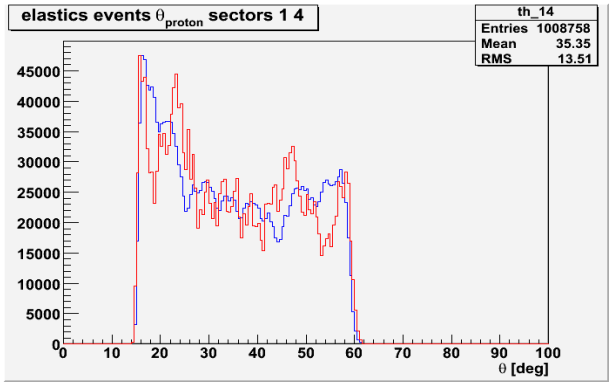
θ_1 vs θ_2 simulation / experiment

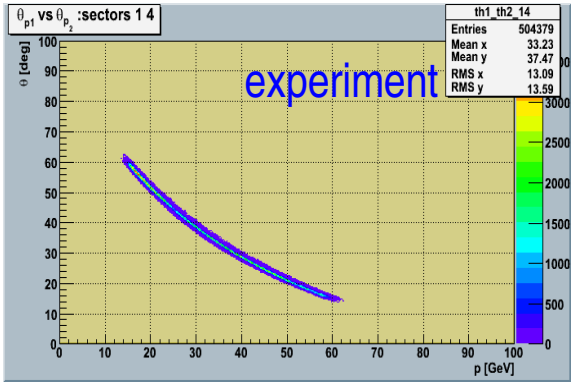


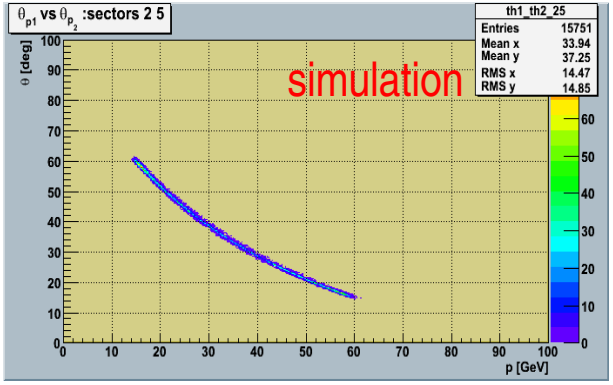


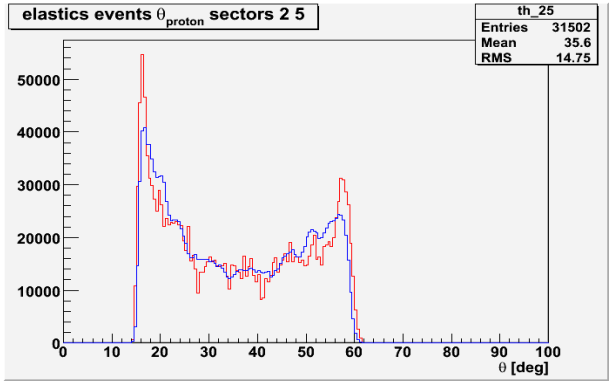


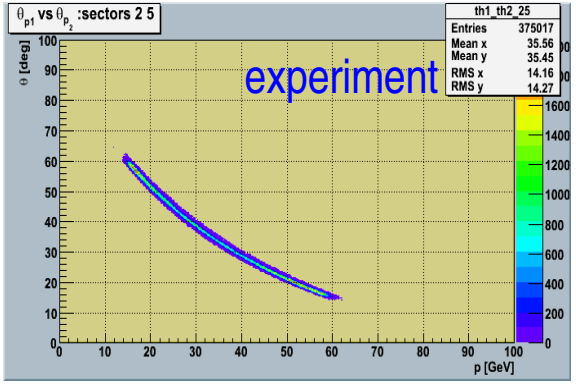












Elastic scattering - vertex reconstruction