

06/21/17

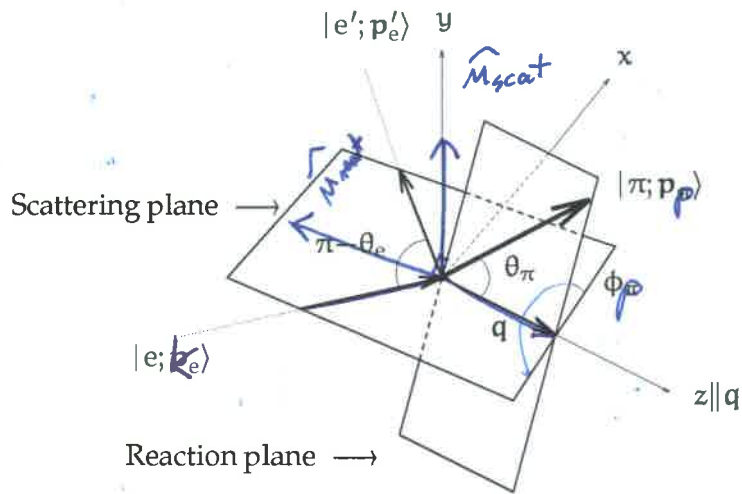
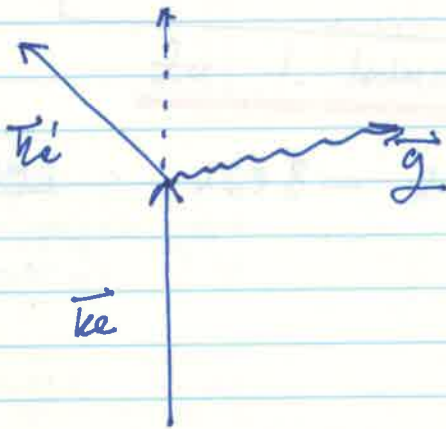


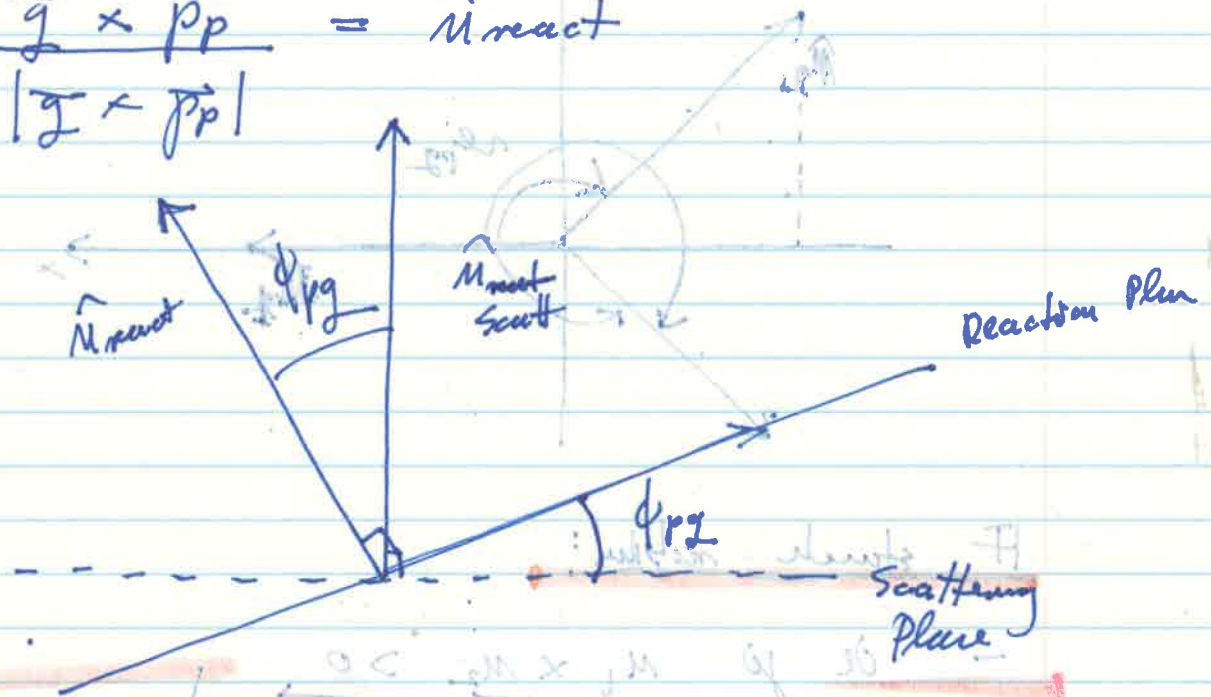
Figure 2.2: The coordinate system used to describe the  $p(e, e'\pi^+)n$  reaction.

$$\frac{\vec{k}_e \times \vec{q}}{|\vec{k}_e \times \vec{q}|} = \hat{n}_{scat}$$



$$\frac{\vec{q} \times \vec{k}_e}{|\vec{k}_e \times \vec{q}|} = \hat{n}_{scat}$$

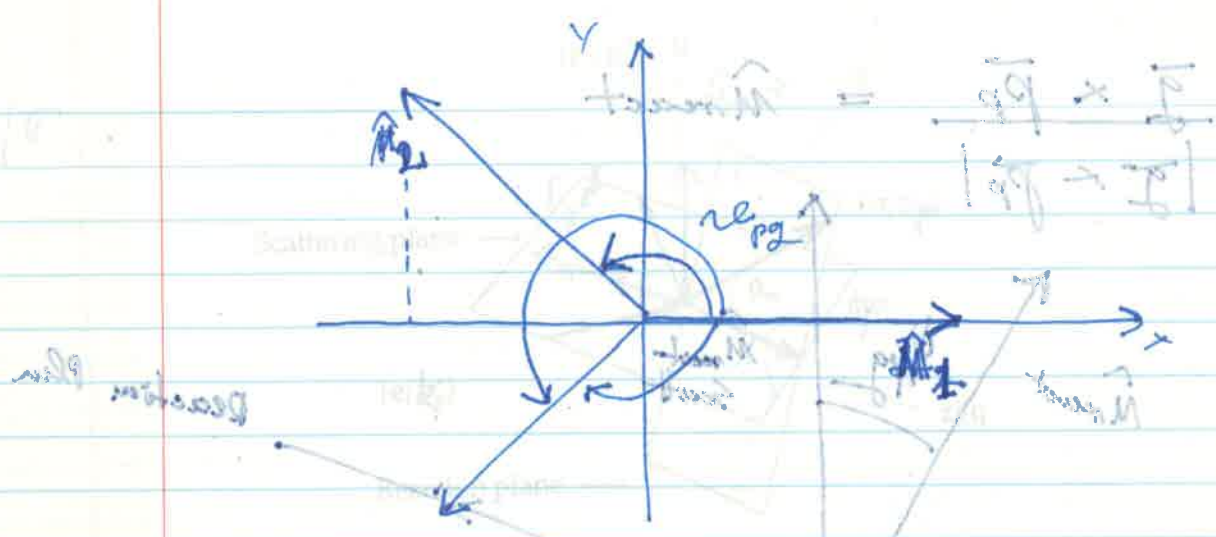
$$\frac{\vec{g} \times \vec{p}_p}{|\vec{g} \times \vec{p}_p|} = \hat{u}_{\text{react}}$$



$$\phi_{pg} = \arccos \left( \frac{\hat{u}_{\text{react}} \cdot \hat{u}_{\text{scatt}}}{|\hat{u}_{\text{react}}| \cdot |\hat{u}_{\text{scatt}}|} \right)$$

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treba, da stu  $\hat{u}_{\text{react}}$   
u  $\hat{u}_{\text{scatt}}$  namirna!

$$\theta_{pg} = \arccos \left( \frac{\vec{p}_p \cdot \vec{g}}{|\vec{g}| \cdot |\vec{p}_p|} \right)$$



IF, sturck nützlich:

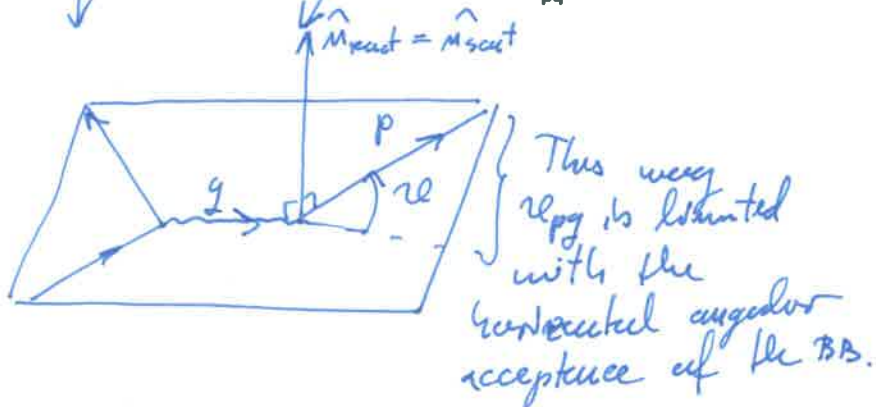
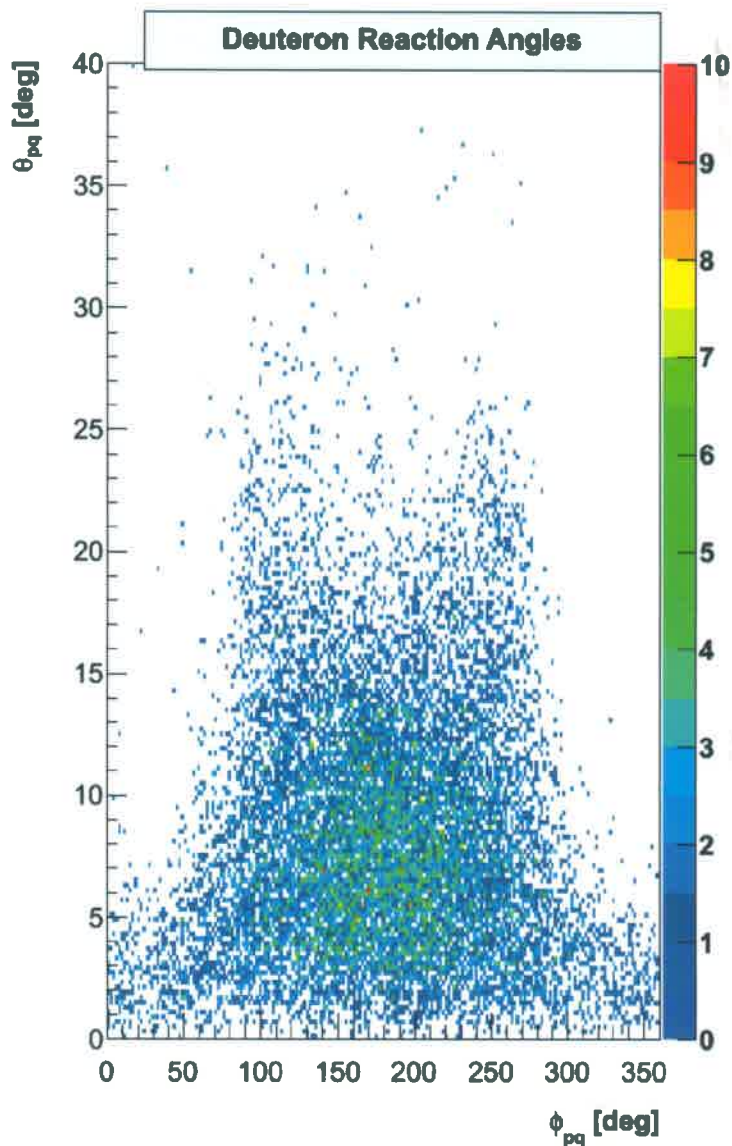
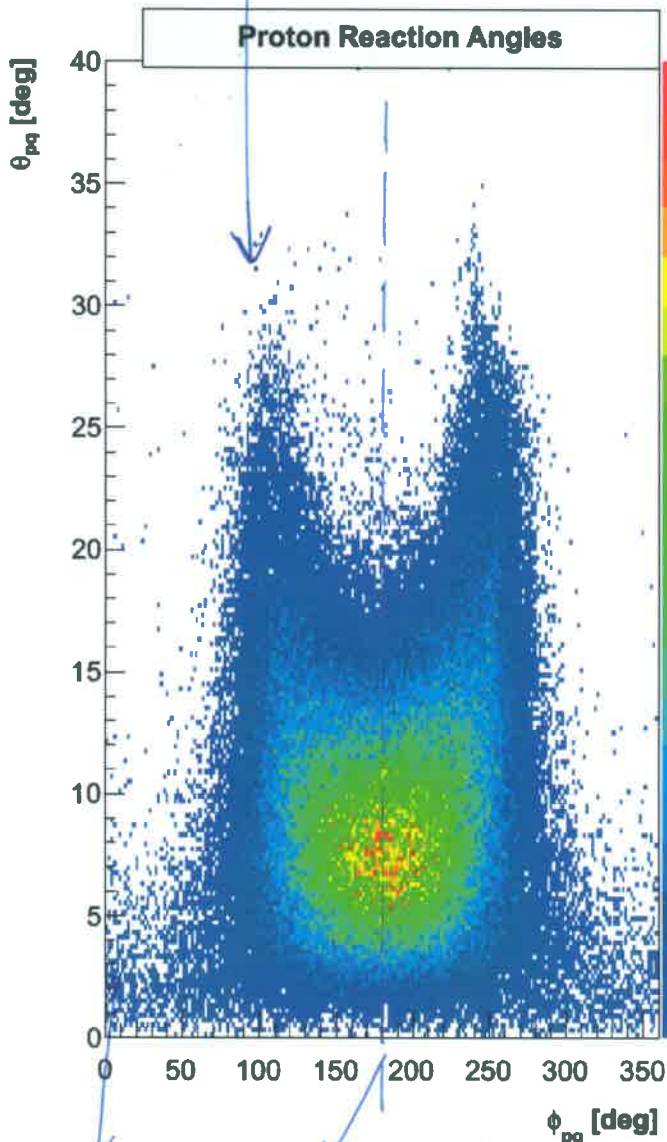
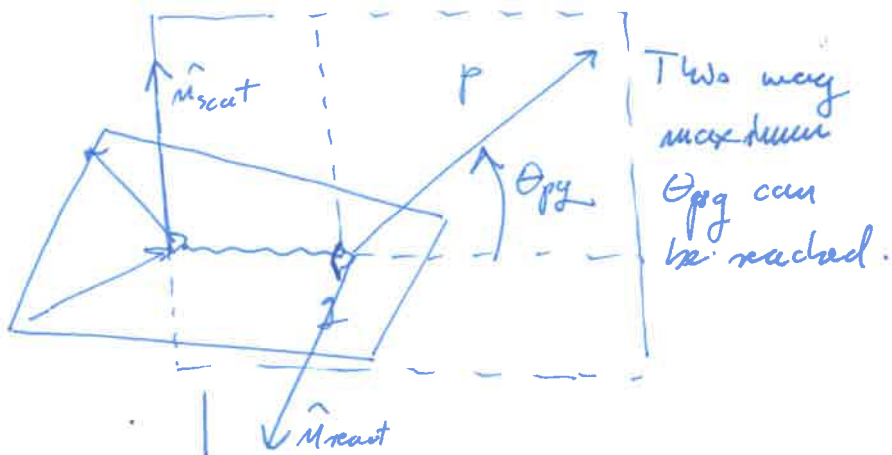
$$\alpha_{pg} = \arccos \left( \frac{\vec{p} \cdot \hat{n}_{scat}}{|\vec{p}| \cdot |\hat{n}_{scat}|} \right)$$

① If  $\alpha_{pg} \leq \frac{\pi}{2} \Rightarrow \underline{\underline{\varphi_{pg} = \alpha_{pg}}}$

② If  $\alpha_{pg} > \frac{\pi}{2} \Rightarrow \underline{\underline{\varphi_{pg} = 2\pi - \alpha_{pg}}}$

$$\cos \alpha_{pg} = \frac{\vec{p} \cdot \hat{n}_{scat}}{|\vec{p}| \cdot |\hat{n}_{scat}|}$$





$$\vec{q} = (0, 0, 2.425) - (2.3 \cdot \cos 14.5, 0, 2.3 \cdot \sin 14.5) =$$

$$= (-0.576, 0, 0.19826)$$

$$\text{tg}\left(\frac{-0.576}{0.19826}\right) = \underline{71^\circ}$$

$p = 2.25 \text{ GeV}/c$   
 $\text{tg}\left(\frac{-0.563}{0.2462}\right) = 76^\circ$

Larger scattering angles

Smaller angles

