Photoproduction off the free proton
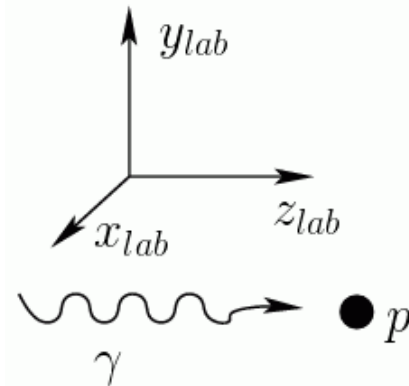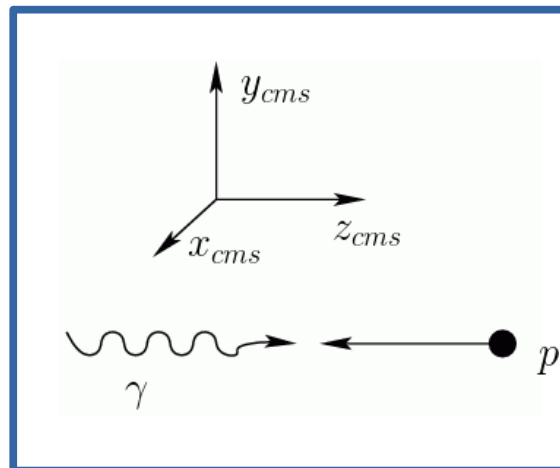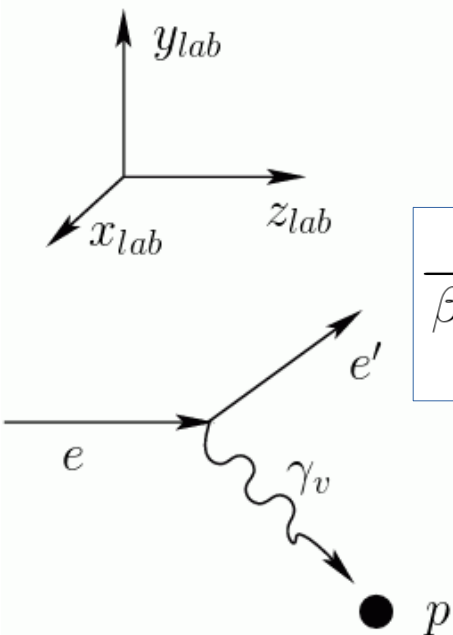
$$\vec{\beta} = \left(0, 0, \frac{|\vec{q_\gamma}|}{E_\gamma + m_p}\right)$$
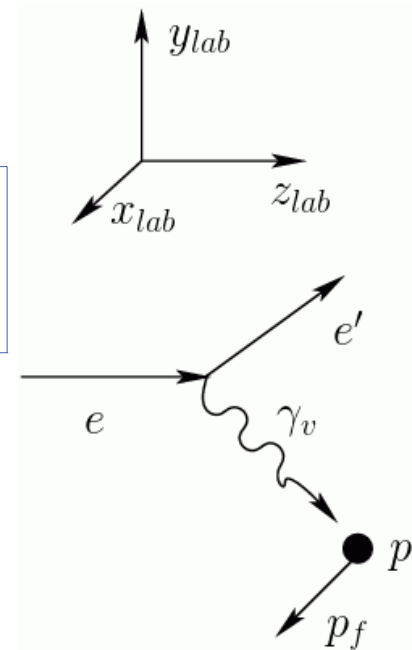
Electroproduction off the free proton

$$\vec{\beta} = \frac{\vec{q_\gamma}}{E_\gamma + m_p}$$

Electroproduction off the moving proton

$$\vec{\beta} = \frac{\vec{q_\gamma} + \vec{p_f}}{E_\gamma + E_p}$$

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