• Introduco componenti sferiche

$$\vec{e}_{\pm 1} = \mp \frac{1}{\sqrt{2}} (\hat{x} \pm i \hat{y}) \qquad \vec{e}_0 = \hat{z} = \frac{\vec{q}}{|\vec{q}|}$$

$$\vec{e}_\lambda^{\,+} \cdot \vec{e}_{\lambda'} = \delta_{\lambda\lambda'}$$

$$\vec{e}_\lambda^{\,+} = (-1)^\lambda \vec{e}_{-\lambda}$$

$$\vec{J} = \vec{J}_L + \vec{J}_T = J_L \vec{e}_0 + (J_1 \vec{e}_1 + J_{-1} \vec{e}_{-1})$$

• continuità corrente $\quad q_\mu J^\mu = 0 \Rightarrow J_L = \frac{\omega}{q} J^0$

• condizione di Lorentz $\quad q_\mu A^\mu = 0 \Rightarrow A_L = \frac{\omega}{q} A_0$

A pot. di Møller

$$A_\mu J^\mu = -\frac{q_\mu^2}{\vec{q}^{\,2}} A_0 J_0 - \vec{A}_T \cdot \vec{J}_T$$

$$\boxed{\frac{1}{2} \eta_{\mu\nu} W^{\mu\nu} = \rho_{00} F_{00} + \rho_{11} F_{11} + \rho_{01} F_{01} + \rho_{1-1} F_{1-1}}$$

$$\rho_{00} = \frac{1}{2} \frac{q_\mu^4}{\vec{q}^{\,4}} \eta_{00} = \frac{q_\mu^4}{\vec{q}^{\,4}} \, 2 E_0 E_0' \cos^2 \vartheta/2$$

$$\rho_{11} = -\frac{1}{2} \eta_{11} = -\frac{1}{2} \frac{q_\mu^2}{\vec{q}^{\,2}} (\vec{q}^{\,2} + 2 E_0 E_0' \cos^2 \vartheta/2)$$

$$\rho_{01} = \frac{1}{2} \frac{q_\mu^2}{\vec{q}^{\,2}} \eta_{01} = -\frac{q_\mu^2}{\vec{q}^{\,2}} \frac{1}{\sqrt{2}} (E_0 + E_0') \frac{|\bar{p}_0 \times \bar{p}_0'|}{|\vec{q}|}$$

$$\rho_{1-1} = -\frac{1}{2} \eta_{1-1} = -\frac{|\bar{p}_0 \times \bar{p}_0'|^2}{\vec{q}^{\,2}}$$