

one can introduce response function $\rightarrow$ not realistic
to separate them

$$\eta_{\mu\nu} W^{\mu\nu} \propto \left[\sigma_L R_L + \sigma_T R_T + \sigma_{TT} R_{TT} \cos 2\phi_N + \right. \\ \left. + \sigma_{TL} R_{TL} \cos \phi_N \pm \left[\sigma_{T1} R_{T1} + \sigma_{TL1} R_{TL1} \cos \phi_N \right] \right]$$

$$\bullet R_L = \left| \langle J^0 \rangle - \frac{\omega}{q} \langle J^3 \rangle \right|^2$$

$$\bullet R_T = \left| \langle J^+ \rangle \right|^2 + \left| \langle J^- \rangle \right|^2$$

$$R_{TT} \cos 2\phi_N = 2 \operatorname{Re} \left\{ \langle J^+ \rangle^* \langle J^- \rangle \right\}$$

$$R_{TL} \cos \phi_N = -2 \operatorname{Re} \left\{ \left[\langle J^0 \rangle - \frac{\omega}{q} \langle J^3 \rangle \right] \left[\langle J^+ \rangle - \langle J^- \rangle \right]^* \right\}$$

$$\bullet R_{T1} = \left| J^+ \right|^2 - \left| J^- \right|^2$$

$$R_{TL1} \cos \phi_N = -2 \operatorname{Re} \left\{ \left[\langle J^0 \rangle - \frac{\omega}{q} \langle J^3 \rangle \right] \left[\langle J^+ \rangle + \langle J^- \rangle \right]^* \right\}$$

both J^0 and J^3 enter because weak (axial)
current is not conserved

$$\text{spherical basis } \hat{e}_0 = \hat{e}_z = \hat{q}, \quad \hat{e}_{\pm} = \mp \frac{1}{\sqrt{2}} (\hat{e}_x \pm i \hat{e}_y)$$