$L_D \quad \phi = ie \int d\lambda \; u^\alpha A_\alpha(\lambda u)$

$= TF|_y \, ie \int d^4x \, d^4z \, d\lambda \; u^\alpha \, e^{ik\cdot x} \, \vec{\Box}_x \, \langle 0| A_\nu(x) A_\alpha(\lambda u) \psi_\gamma(y) \bar{\psi}_\rho(z) |0\rangle \; i \overleftarrow{\partial}_z^{\rho\sigma} e^{-ip\cdot z} \; u_\sigma(p)$

$= TF|_y \; ie u^\alpha \int d^4x \, d^4z \, d\lambda \; e^{ik\cdot x} \, \vec{\Box}_x \; \langle A_\nu(x) A_\alpha(\lambda u) \rangle \; \langle \psi_\gamma(y) \bar{\psi}_\rho(z) \rangle \; i \overleftarrow{\partial}_z^{\rho\sigma} e^{-ip\cdot z} \; u_\sigma(p)$

$= TF|_y \; ie u^\alpha \int d^4x \, d^4z \, d\lambda \; e^{ik\cdot x} \, \vec{\Box}_x \int d\tilde{k}_1 \left(-i \frac{g_{\nu\alpha}}{k_1^2} \right) e^{-ik_1\cdot(x-\lambda u)} \int d\tilde{k}_2 \left(\left(i \frac{\not{k}_2}{k_2^2} \right)_{\gamma\rho} e^{-ik_2\cdot(y-z)} \right) i \overleftarrow{\partial}_z^{\rho\sigma} e^{-ip\cdot z} u_\sigma(p)$

$= TF|_y \; (-e u^\alpha) g_{\nu\alpha} \int d^4x \, d^4z \, d\lambda \, d\tilde{k}_1 \, d\tilde{k}_2 \quad e^{-ix\cdot(k_1-k)} \; e^{-ik_2\cdot y} \; e^{-iz\cdot(p-k_2)} \; e^{ik_1\cdot\lambda u}$

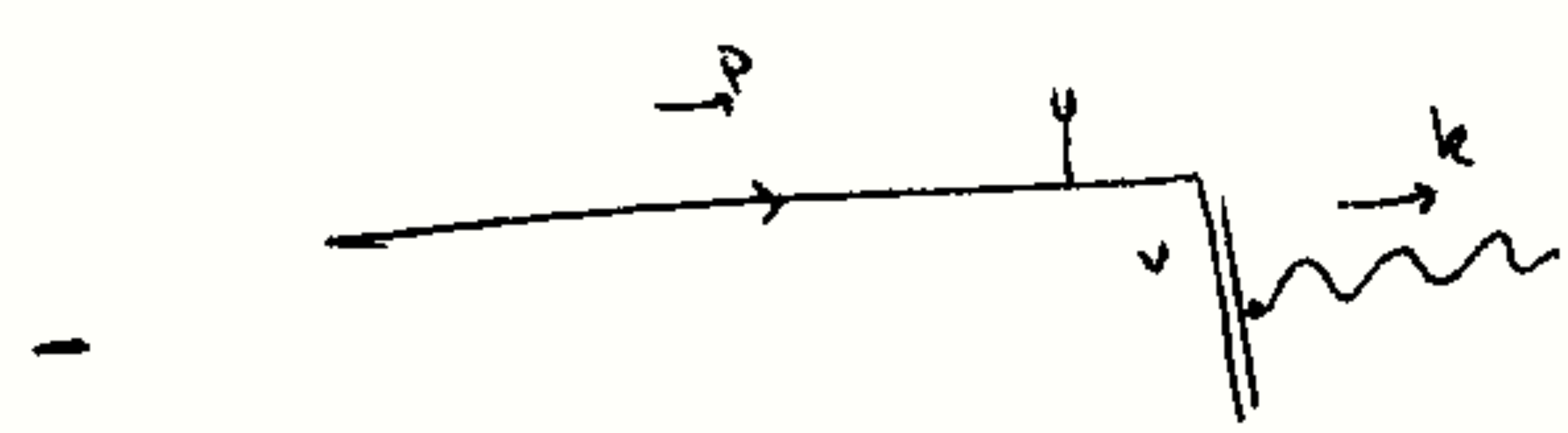
$\left\{ -i \, \delta_\gamma^\sigma \right\} \; u_\sigma(p)$

$k_1 = k$
$k_2 = p$

$= TF|_y \; (ie u^\alpha g_{\nu\alpha}) \int d\lambda \; e^{-ip\cdot y} \; e^{ik\cdot\lambda u} \; u_\gamma(p)$

$= TF|_y \; ie \, u_\nu \left(\frac{i}{k\cdot u} \right) e^{-ip\cdot y} \; u_\gamma(p)$

$= TF|_y \; -e \, \frac{u_\nu}{u\cdot k} \, e^{-ip\cdot y} \; u_\gamma(p)$



(linea fermionica) ENTRANTE

Controllo diagrammatico

$\left(e \frac{u_\nu}{u\cdot k} \right) u(p)$ ok

CAMPO FOTONICO: