

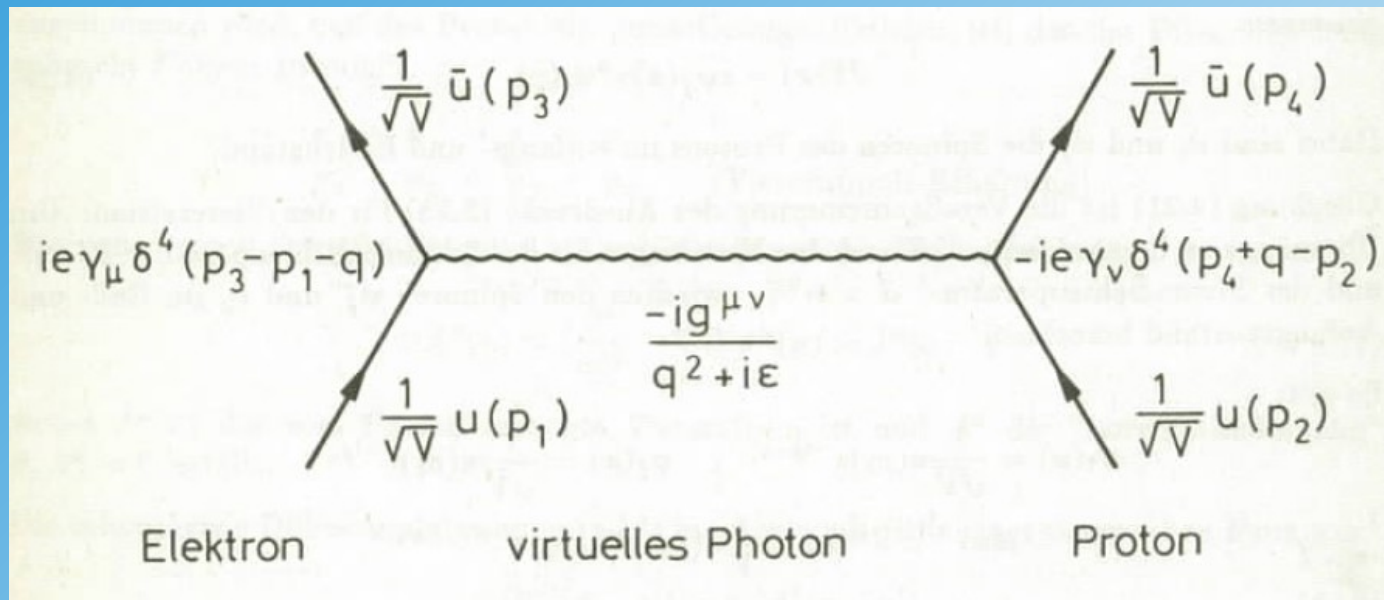
Feynman Graphen

- Perturbation Theory
- Feynman Rules

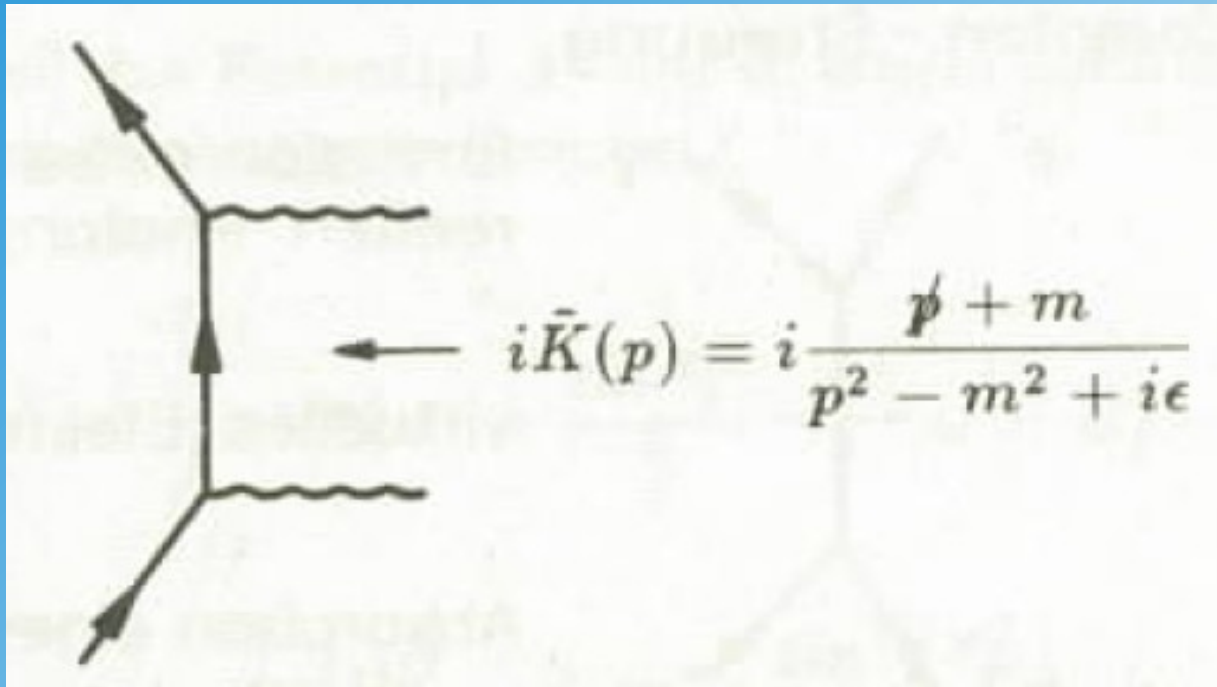
Fermion-Fermion Scattering

$$S_{fi}^{(1)} = ie^2 \int \frac{d^4 q}{(2\pi)^4} \delta^4(p_3 - p_1 - q) \delta^4(p_4 + q - p_2) (2\pi)^8$$

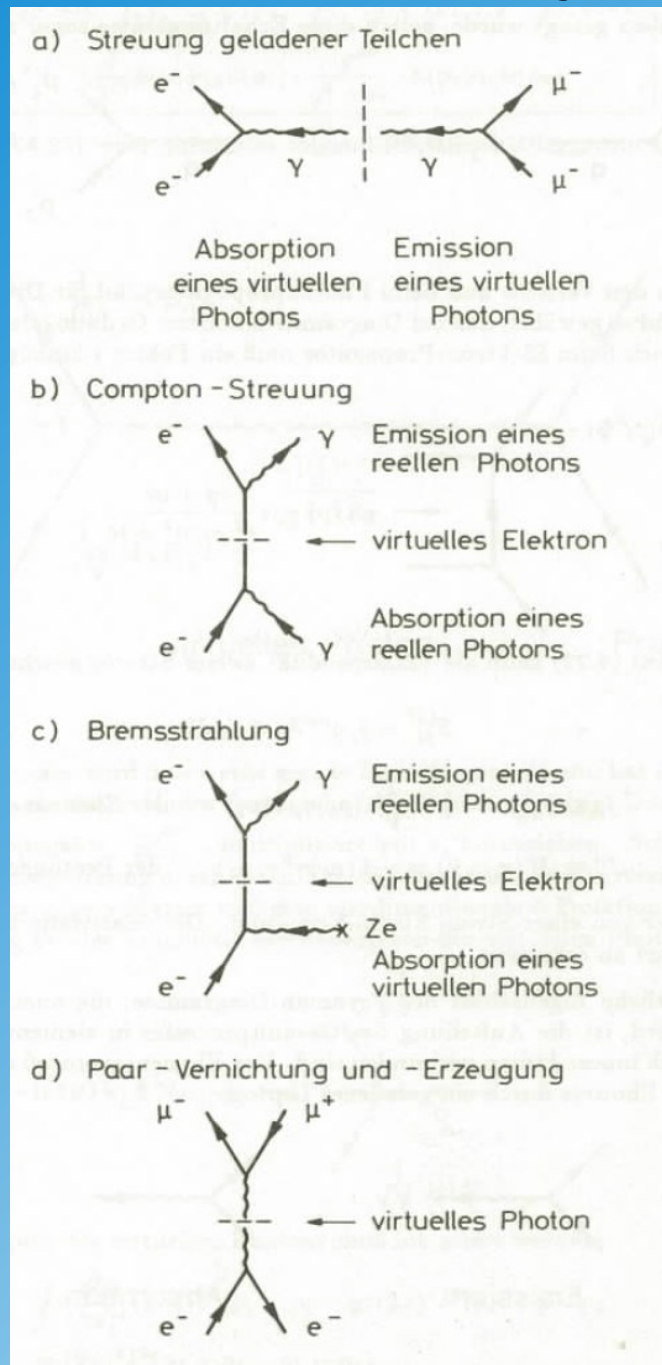
$$\cdot \frac{1}{V^2} \bar{u}(p_3) \gamma_\mu u(p_1) \cdot \frac{-g^{\mu\nu}}{q^2 + i\epsilon} \cdot \bar{u}(p_4) \gamma_\nu u(p_2)$$



Electron-Propagator



QED Feynman Diagrams



same as synchrotron radiation

rotated scattering graph