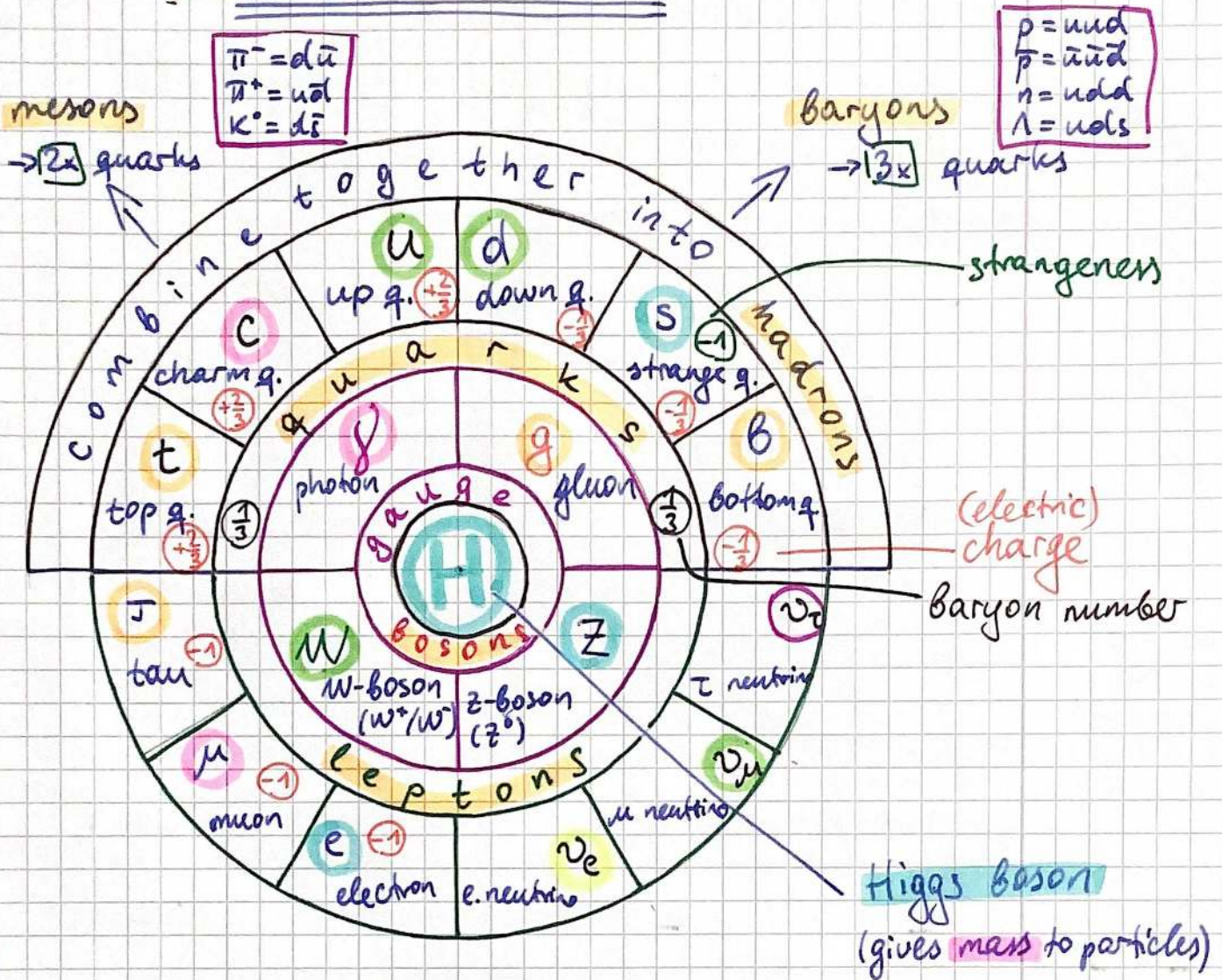
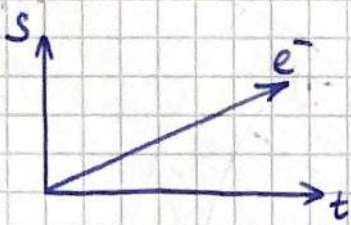


Particle Physics (Standard Modell)

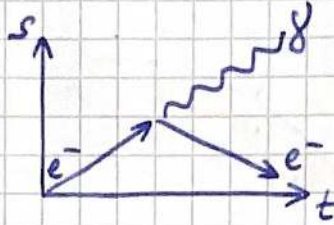


Feynman diagrams

- represent **particle interactions**
- **quarks/leptons** = straight lines (one in, one out)
- **exchange particles** = waves/dashes/curly
- arrows mean **matter/antimatter**

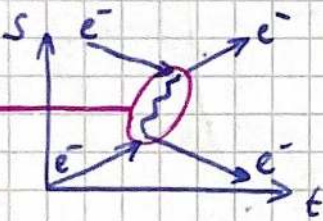


electron travelling

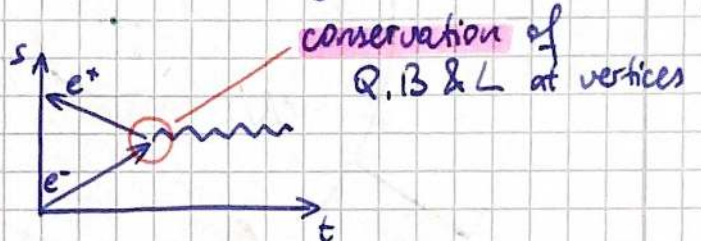


electron emitting a photon

virtual photon exchanged

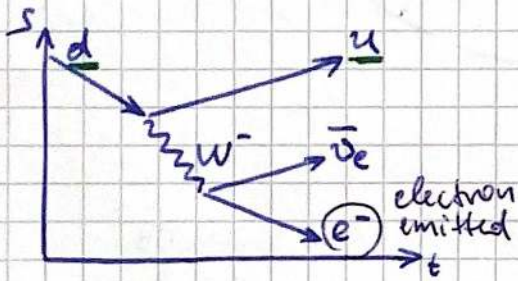


two electrons repelling

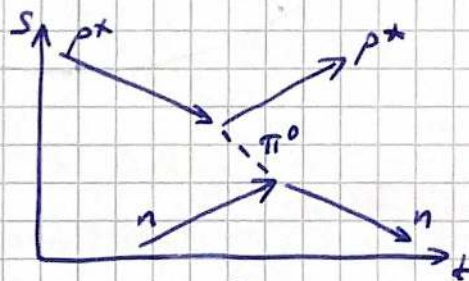


electron & positron annihilating

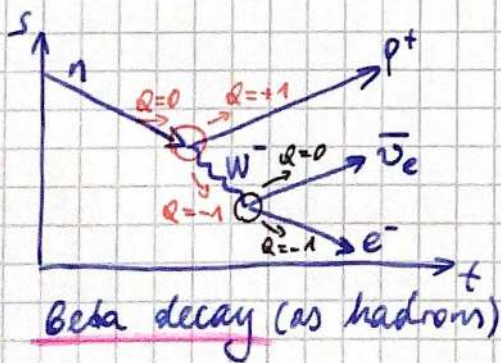
$n \rightarrow p^+$
 $udd \rightarrow uud$



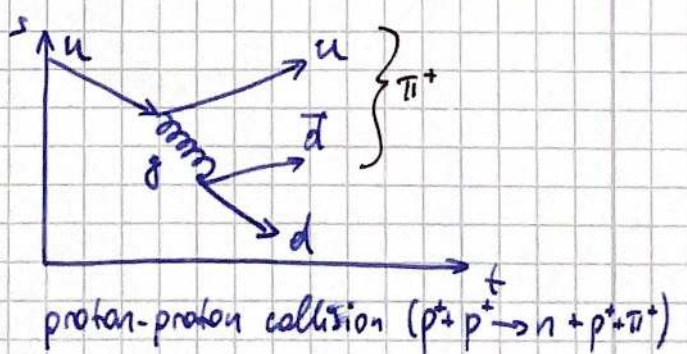
beta decay ($n \rightarrow p^+ + e^-$)



mediation of strong force



beta decay (as hadrons)



proton-proton collision ($p^+ p^+ \rightarrow n + p^+ + \pi^+$)