

Weltformel

$$\begin{aligned} \mathcal{L} = \sqrt{g} \left\{ \frac{1}{4} G^{\mu\nu} G_{\mu\nu} + \frac{1}{4} W^{\mu\nu} W_{\mu\nu} + \frac{1}{4} Y^{\mu\nu} Y_{\mu\nu} \right. \\ + i \bar{q} \gamma^\mu D_\mu q \\ + i \bar{l} \gamma^\mu D_\mu l \\ + D_\mu \varphi^\dagger D^\mu \varphi - \mu^2 \varphi^\dagger \varphi + \frac{1}{2} \lambda (\varphi^\dagger \varphi)^2 \\ + \left[\bar{q}_L h_U \varphi u_R + \bar{q}_L h_D \tilde{\varphi} d_R \right. \\ \left. + \bar{l}_L h_L \tilde{\varphi} l_R + \text{h.c.} \right] \\ \left. + \frac{1}{16\pi^2} M_P^2 R \right\} \end{aligned}$$

+ Neutrino - Massen - Terme

+ B und L verletzende nicht-renormierbare Wechselwirkungen

+ Kosmologische Konstante oder