

1<sup>st</sup>2<sup>nd</sup>3<sup>rd</sup>

generation

fermions

gauge bosons

EWSB

quarks

2.2 MeV

 $u$ 

up

1.27 GeV

 $c$ 

charm

173 GeV

 $t$ 

top

← mass

4.7 MeV

 $d$ 

down

93 MeV

 $s$ 

strange

4.18 GeV

 $b$ 

bottom

 $g$ 

gluons

strong interaction

511 keV

 $e$ 

electron

106 MeV

 $\mu$ 

muon

1.78 GeV

 $\tau$ 

tau

 $\gamma$ 

photon

125 GeV

 $H$ 

Higgs

electromagnetic interaction

weak interaction

leptons

 $\nu_e$  $e$  neutrino $\nu_\mu$  $\mu$  neutrino $\nu_\tau$  $\tau$  neutrino

80.4 GeV

 $W^\pm$ 

91.2 GeV

 $Z$