

Purely flavor-changing Z' bosons

No explanation for flavor structure of the Standard Model

- ▶ horizontal/gauged flavor group G_H ?
- ▶ extra flavor-changing Z' (as remnant from breaking of G_H)
- ▶ Comprehensive study of collider and flavor constraints
- ▶ **Explanation of $(g - 2)_\mu$ and $\tau \rightarrow \mu \bar{\nu} \nu$ anomaly**
- ▶ New exotic decay $\tau \rightarrow \ell K^{0,\pm} \pi^{0,\mp}$

Three generations of matter (fermions)

	I	II	III	
mass	2.4 MeV/c ²	1.27 GeV/c ²	171.2 GeV/c ²	126 GeV/c ²
charge	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$	0
spin	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	1
name	u	c	t	γ
	up	charm	top	photon
	d	s	b	g
	down	strange	bottom	gluon
	ν_e	ν_μ	ν_τ	Z^0
	electron neutrino	muon neutrino	tau neutrino	Z boson
	e	μ	τ	W^\pm
	electron	muon	tau	W boson

