

I think that it is possible to estimate the mass spectrum of an infinite generation in the standard model.

I try a simple law, inspired by the Balmer series:

$$M(n) = \alpha + \beta n^\gamma$$

where γ is a half-integer, or integer, value.

The three series (quarks and leptons) have not exact values (this happen only if the γ values are real values, and there are three parameter and three data).

I obtain the three series:

$$\begin{aligned} M_{uct\dots}(n) &= 1.870578 + 0.3257139 n^{12} MeV \\ M_{dsb\dots}(n) &= 4.578503 + 0.1224770 n^{9.5} MeV \\ M_{e\mu\tau\dots}(n) &= -0.2976583 + 0.8126248 n^7 MeV \end{aligned}$$

the masses in this serie are:

$M_{uct\dots}$	$M_{dsb\dots}$	$M_{e\mu\tau\dots}$
2.196292 MeV	4.700980 MeV	0.5149665 MeV
1.335995 GeV	93.26130 MeV	103.7183 MeV
173.0996 GeV	4.180058 GeV	1.776913 GeV
5.464574 TeV	64.21779 GeV	13.31375 GeV
79.51999 TeV	534.9007 GeV	63.48601 GeV

if there is no constraint on the exponent, the three series are;

$$\begin{aligned} M_{uct\dots}(n) &= 1.910036 + 0.2899636 n^{12.10583} MeV \\ M_{dsb\dots}(n) &= 4.566954 + 0.1330458 n^{9.424649} MeV \\ M_{e\mu\tau\dots}(n) &= -0.3444624 + 0.8554624 n^{6.953205} MeV \end{aligned}$$

and the masses of the model are:

$M_{uct\dots}$	$M_{dsb\dots}$	$M_{e\mu\tau\dots}$
2.200000 MeV	4.700000	0.5110000 MeV
1.280000 GeV	96.00000 MeV	105.6600 MeV
173.1000 GeV	4.180000 GeV	1.776800 GeV
5.633516 TeV	628.4010 GeV	13.13518 GeV
83.93741 TeV	514.6974 GeV	61.98407 GeV