

COMPARISON OF OBSERVED WITH PREDICTED MASSES OF ELEMENTARY PARTICLES*

N (number of black hole, gravitationally trapped Z-bosons associated with each core)	n (number of fundamental particles per observable particle core)		
	1	2 (i.e., 2 quarks)	3 (i.e., 3 quarks)
	Leptons	Mesons	Baryons
1	<i>Electron (stable, 0.511 Mev measured):</i> $M_e \alpha^2 / (1.5 * 2\pi) = 0.51 \text{ MeV}$	<i>Pions (139.57, 134.96 Mev measured):</i> $M_e n(N + 1) / (2\alpha) = 35n(N+1) = 140 \text{ MeV}$	<p>'... I do feel strongly that this [string theory] is nonsense! ... I think all this superstring stuff is crazy and is in the wrong direction. ... I don't like it that they're not calculating anything. ... why are the masses of the various particles such as quarks what they are? All these numbers ... have no explanations in these string theories - absolutely none! ...'</p> <p>– Richard P. Feynman in Davies & Brown, <i>Superstrings</i> 1988, at pages 194-195</p>
2*	<i>Muon (Most stable particle after neutron, 105.66 Mev measured):</i> $M_e n(N + 1) / (2\alpha) = 35n(N+1) = 105 \text{ Mev}$		
6		<i>Kaons (493.67, 497.67 Mev measured):</i> $M_e n(N + 1) / (2\alpha) = 35n(N+1) = 490 \text{ Mev}$	
7		<i>Eta (548.8 Mev measured):</i> $M_e n(N + 1) / (2\alpha) = 35n(N+1) = 560 \text{ Mev}$	
8*	<i>*Magic number of nuclear physics => High stability</i>		
10		<i>Lambda & Sigmas (1115.6, 1189.36, 1192.46, 1197.34 Mev measured):</i> $M_e n(N + 1) / (2\alpha) = 35n(N+1) = 1155 \text{ Mev}$	
12		<i>Xi (1314.9, 1321.3 Mev measured):</i> $M_e n(N + 1) / (2\alpha) = 35n(N+1) = 1365 \text{ Mev}$	
15		<i>Omega (1672.5 Mev measured):</i> $M_e n(N + 1) / (2\alpha) = 35n(N+1) = 1680 \text{ Mev}$	
50*	<i>Tauon (1784.2 MeV measured):</i> $M_e n(N + 1) / (2\alpha) = 35n(N+1) = 1785 \text{ Mev}$		

*Only particles with lifetimes above 10^{-23} s are included above. The blank spaces predict other particles. The integer formula is very close, as statistical tests show. (Notice that the periodic table of chemistry did not explain discrepancies from integer masses until mass defect due to binding energy, isotopic composition, and other factors were discovered long after the periodic table was widely accepted. Doubtless there is analogous 'noise' in the measurements due to field interactions.)