Shortened great table of elementary particles.

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Abstract

Stable particles (**p +, n0, D, He-3, α**) moving with speeds (**0,3 c – 0,99 c)** creates baryons and mesons.
Stable **electrons** moving with speeds (**0,99 c – c)** creates leptons (**μ–, τ–**), neutrinos (**νe, νμ, ντ**) and bosons **W +, W-, Z**.
Speeds of electrons and protons in atoms are smaller. For example: An electron moving at a speed $\mathbf{v_e = 0{,}003c}$ creates spectral line **Hα.**
Weak interactions are caused with stable **electrons,** which creates leptons, neutrinos and bosons **W +, W-, Z**.
The strong interactions are caused with stable particles (**p +, n0, D, He-3, α**), which creates baryons and mesons. Therefore creation and annihilation operators in physics are irrelevant.

Theory

Calculation of the kinetic energy of a particle moving at the velocity of v , [1] p**.** 51-52:

$$T_{kin} = \frac{mc^2}{\cos^2 \vartheta}\left[\ln\left|1 - \frac{v}{c}\cos\vartheta\right| + \frac{\frac{v}{c}\cos\vartheta}{1 - \frac{v}{c}\cos\vartheta}\right]$$

while ϑ isn't $\frac{\pi}{2}, \frac{3\pi}{2}$

For $\vartheta = 0°$ we have the kinetic energy in the direction of motion

$$T_{kin_{\parallel}} = mc^2\left[\ln\left|1 - \frac{v}{c}\right| + \frac{\frac{v}{c}}{1 - \frac{v}{c}}\right]$$

For $\vartheta = 180°$ we have the kinetic energy against the direction of motion

$$T_{kin_{\parallel}} = mc^2\left[\ln\left|1 + \frac{v}{c}\right| - \frac{\frac{v}{c}}{1 + \frac{v}{c}}\right]$$

Kinetic energy /of electron , proton , neutron, alpha particle./
$E = mc^2 [\ln |1-v/c| + (v/c) / (1-v/c)]$ in direction of motion of electron, proton ,
where v is velocity of electron proton , neutron, alpha particle.

Kinetic energy /of electron , proton , neutron, alpha particle./

$E = mc^2 [\ln |1+v/c| - (v/c) / (1+v/c)]$ against direction of motion of electron , proton ,
where v is velocity of electron , proton , neutron, alpha particle.

$\frac{v}{c}$	**Front of electron, proton, neutron, deuteron, He-3, α-particle** $\left[ln\left\|1-\frac{v}{c}\right\|+\frac{\frac{v}{c}}{1-\frac{v}{c}}\right]$	**Behind of electron, proton, neutron, deuteron, He-3, α-particle** $\left[ln\left\|1+\frac{v}{c}\right\|-\frac{\frac{v}{c}}{1+\frac{v}{c}}\right]$	
Electron **0,002717146** **It is in the direction of motion**	**3,70485**5771252357587813986763267e-6 **1,893177327504567944845613099435 6 eV** $Lambda_{id}$ **(v/c= 0,002717146)=hc/** $E_{k,id}$ **=6549,000519283911510309389 94e-10m** **4,57768**2611525892171950925997589 5**e+14 Hz** **1,89317**7327504567944845613099435 6 **eV**		
Electron **It should be in the direction of motion**	**3,704856065018122815706535948504e-6** **$Lambda_{id}$ = c/** f_{max}**= 6549e-10m** **4,577682974499923652466025347381 3e+14 Hz** **1,893177477618559059398381432279 6 eV**		
Electron **It should be against the direction of motion**		**3,689083528934724999249217565266 6e-6** **1,885117728588101456591150980689 7 eV** **$Lambda_{ad}$ = c/** f_{min}**= 6577e-10m** **4,558194587197810551923369317317 9e+14 Hz** **1,885117728588101456591150980690 3 eV**	

Electron **0,0027212042** **It is against the direction of motion**		**3,6890835**6347542947609326299611 25e-6 **1,8851177**462383644166232590190353 **eV** $Lambda_{ad}$ **(v/c= 0,0027212042)=hc/ $E_{k,ad}$ = = 6576,99993841987869470e-10m**	
Electron average speed **0,0027191751**	**3,7**1040129711246297808215106825 21e-6 **1,89**601108527427807723966669181 09 **eV** $Lambda_{id}$ **(v/c= 0,0027191751)=hc/ $E_{k,id}$ = =6539,21245356557641727835 70e-10m**	**3,68**3593932950416663919083157891 2e-6 **1,88**2312550924966792415987772425 2 **eV** $Lambda_{id}$ **(v/c= 0,0027191751)=hc/ $E_{k,ad}$ = =6586,8e-10m**	
Proton **0,075**	***Down quark / p:*** **0,0031195396113692225967210545118109** ***Down quark:*** **2,92697671 MeV**	***Up quark / p:*** **0,0025532197191610043413170483032 69** ***Up quark:*** **2,4MeV**	
Proton **0,081622**	***Down quark / p:*** **0,0037302615346601410853636615401917** ***Down quark:*** **3,5 MeV**	***Up quark / p:*** **0,0029991740444424494323228316937 02** ***Up quark:*** **2,81404106871 MeV**	
Proton **0,08878**	***Down quark / p:*** **0,0044589013511482922312132108807756** ***Down quark:*** **4,18366235 MeV**	***Up quark / p:*** **0,0035171037326795615947714523093 24** ***Up quark:*** **3,3 MeV**	
Proton **0,094686**	***Down quark / p:*** **0,0051156918494022662432562213837619** ***Down quark:*** **4,8MeV**	***Up quark / p:*** **0,0039715278483606256196473452168 45** ***Up quark:*** **3,72637 MeV**	
0,1	**0,0057505954532848098836101302717983**	**0,0044010888952339509530430323709 09**	
0,2	**0,0268564486857902442337049096901 65**	**0,0156548901272879595450513584878 48**	
0,3	**0,0718964846326961925159327173302 44**	**0,0315950336982602828047267561117 24**	

		π0 134,9766 /α: 0,036212199325336157637665009906532	
		π+ 139,57018 /α: 0,037444588010314721825837072591519	
		π0 134,9766 /He-3: 0,048062272156462624517553622136065	
		π+ 139,57018 /He-3: 0,049697947467090419133296972965555	**γ + γ or π0 + π0 + π0 or π+ + π0 + π−**
Neutron 0,38866927969772030189	**π0/n0 : 0,14365861400422067389025658 46 pi zero π0 134,97666 MeV/c^2**	**/n0 : 0,048459799260954729063079397363521 45,531149620599608497840272931116 MeV/c^2 f =1,1009383475444032656900 41 e+22 Hz …gamma rays γ + γ**	**γ + γ f=1,10 e+22 Hz**
	η 547,853/α: 0,14698075101153377674550765593683		
0,4	**0,15584104290067598346115257036 3**	**0,05075795090692721621887912450 2706**	
	η 547,853 /He-3: 0,19507870243978969858342338263158		**γ + γ or π0 + π0 + π0 or π+ + π0 + π−**
	ρ (770)/α: 0,20657946251801305841903009579 46		
	ω(782)/α: 0,20979888271309897621257342196283		
	ρ (770) /He-3: 0,27418048432451418155825742421108		
	ω(782)/He-3: 0,27845342693736375321890559186113		

		π0 134,9766 /D: 0,071963997981952415266523825853126	
Deuteron	**η 547,853 /D: 0,29209279376133771750815235800215**		**γ + γ or π0 + π0 + π0 or π+ + π0 + π−**
	Λ = 1115,683 Λ /α: 0,29932103179283683513781656411222		
Deuteron		**π0/D: 0,071963997981952415266523825853126**	**γ + γ or π0 + π0 + π0 or π+ + π0 + π−**
	Λ0 /α: 0,29932103179283683513781656411222		
0,5	**0,30685281944005469058276787854182**	**0,07213177477483104864467978213101 6**	
	h_1 (1170)/α: 0,31389346902087698487047430140218		
	K *(892) /He-3: 0,31762206755515149344151379531985		
		π+ 139,57018 /D: 0,07441310680414779561926643839457 7	
	Σ+ = 1189,37 Σ+/α: 0,31909014978577817050888548705873		
	Σ- = 1197,449 Σ- /α: 0,32125762443211976466338853140149		
0,51	**0,32746643865314748707268176119 11**	**0,07436130645597203360793550932 1046**	
	Δ(1232)/α: 0,33052714002882089347044815327136		**p+ + π+**

	f_0 , a_0 (980) /He-3: 0,34895698004938168561960035808683		
0,52	**0,34936415825313289436152414671984**	**0,07660507170029028338263562373576**	
	Ξ^0 = 1314,86 Ξ^0/α: 0,35275723647588915583486482046297		
	f_0 (1370)/α: 0,36755047227230894809619640420598		
	Σ (1385)/α: 0,37157474751616634533812556191626		
0,53	**0,37263699019005232516794648380 77**	**0,07886250664617416036351930653 2456**	
	K $_1$, π $_1$ (1400) /α: 0,37559902276002374258005471962654		
	η(1405)/α: 0,37694044784130954166069777219664		
	η(1475)/α: 0,39572039897931072878970050817797		
	Λ = 1115,683 /He-3: 0,39727078609432072158891080235856		
0,54	**0,39738425397926450175321943520399**	**0,08113306577618714119789618284 8407**	
	f_0 (1500)/α: 0,40242752438573972419291577102844		
	N , Λ(1520) /α: 0,40779322471088292051548798130882		
	Σ^+ /He-3: 0,42350914628707458716875926316096		
0,55	**0,42371452600445061157748911992473**	**0,08341622125373589765523107098 0462**	
	Δ , Λ , π $_1$ (1600) /α: 0,42925602601145570580577682243034		

	Δ(1620)/α: 0,434621726336598902128349032710 71		
	Δ(1232) /He-3: 0,438688774919222690493211878737 73		**p+ + π+**
	b_1 (1235) /He-3: 0,439757010572435083408373920650 25		
	N , K^* , φ(1680)/α: 0,450718827312028491096065663551 85		
0,56	**0,451746720657442522133152184240 03**	**0,085711462287086703888239653061 11**	
	K $_1$, f_2 (1270) /He-3: 0,452219759859913000751931076296 2		
	Λ , Ξ , $ρ_3$ (1690)/α: 0,453401677474600089257351768692 04		
0,57	**0,481611325054308264739185185372 47**	**0,088018294519452358178271244232 199**	
	Λ , π (1800)/α: 0,482913029262887669031498925234 13		
	Λ , η(1405) /He-3: 0,500290364254470681934222962359 19		
	N(1440) /He-3: 0,512753113541948599277780118005 14		
0,58	**0,513451813247657890262799573407 53**	**0,090336239443938726693435259899 973**	
	Σ (1915)/α: 0,513765806132461047886289134346 31		
	Δ , Ξ , f_2 (1950)/α: 0,523155781701461641450790502336 97		
	η(1475) /He-3: 0,525215862829426516621337273651 1		
Neutron 0,5836009497521116689581	**K+/n0 : 0,52543123**81545198230873	**/n0 : 0,091173551360824140129694826 67**	**μ+ + νμ or π+ + π0 or**

	Kaon K+ 493.677 MeV/c^2	**85,663512267081593398254758 3 MeV/c^2 f =2,0713346011694342531285 1e+22 Hz …gamma rays γ + γ**	**π0 + e+ + νe**
	K+ 493,677/n0 : 0,525431238271957696593626505467 08		
	K+ 493,677/p+ : 0,526155502665375154957989657511 34		
	D_s^+ 1968,47/α: 0,528111005951731383254685938530 9		
	K0, K0S, K0L 497,614 /n0 : 0,529621473557532470082140468143 13		
Neutron 0,58484084562020497175	**K0/n0** : **0,52962147**34391580471559019175536 9 **K0 497,614 MeV/c^2**	**?/n0 : 0,091462174250863105453354510569334 85,934692341921117094216144 MeV/c^2 f = 2,0778917064911439211823414e+22 Hz …gamma rays γ + γ**	**π± + e∓ + νe or π± + μ∓ + νμ or π0 + π0 + π0 or π+ + π0 + π−**
	K0, K0S, K0L 497,614 /p+ : 0,530351513850813370603177918827 18		
	f_0 (500) /n0 : 0,532160945589887412816098892056 02		
	a_4(2040)/α: 0,547301433164606024902365448598 68		
0,59	**0,54742627096011887485517070757112**	**0,092664833842203050585492472872163**	
	K^*_4(2045)/α: 0,548642858245891823983008501168 77		
	φ(2170)/α: 0,582178485278036800999084815421 14		
Neutron 0,599835288	**η/n0**: : **0,58309194**09181876989162329300171 3 **Eta meson η 547,853 MeV/c^2**	**γ ? /n0** : **0,094965026195762925653475196132505 89,22585075434455074110 MeV/c^2 f=2,1574715663074004106597 6e+22Hz…**	**γ + γ or π0 + π0 + π0 or π+ + π0 + π−**

		gamma rays $\gamma + \gamma$	
0,6	**0,583709268125844934816472788231 99**	**0,095003629245735553650937031148342**	
	η 547,853 /n0 : 0,583091941048513177547076452619 14		
	D_{s0}^{*} (2317)$^{+}$/α: 0,621616382667839293969990560981 93		
0,61	**0,622494024244119161976852333221 68**	**0,097352191418731876323327634828747**	
	Σ (1750) /He-3: 0,623137464373895867177857782297 92		
	Λ(1830) /He-3: 0,651623748459559678248845566631 54		
	Δ(1232)/D: 0,656851969258118633958459121440 69		**p+ + π+**
	Ξ_c^0 = 2470,88 Ξ_c^0/α: 0,662900080969491046475861146879 17		
0,62	**0,663994921106715454021855591345 72**	**0,099710099861576657579514110396835**	
	D^0 1864,83 /He-3: 0,664025964393355559993876873235 79		
	Λ_c (2625)$^{+}$ /α: 0,704248167675044517337602599299 77		
	Ξ^- /D: 0,704681669065055178319184257629 36		
0,63	**0,708450429358835779034815464365 42**	**0,102076947334008389341832892334 84**	
	Ξ_c(2645)/α: 0,709613868000187713660174809580 15		
	Ξ_c(2815) /α: 0,755222320763904882402038596963 37		

0,64	**0,756126530245796411366749585170 45**	**0,104452339397082664421342267560 64**	
	f_1, ω (1420) /D: 0,757085873657896477452120091270 92		
	f_0 (1500) /D: 0,799738598934397687449422631624 22		
0,65	**0,807320732644179454527272024443 5**	**0,106835893973095302628025844805 72**	
	N , Ω , Σ (2250) /He-3: 0,801176739909294686371531434383 04		
	Δ , D_1(2420) ^{0} /He-3: 0,861710093591330284897380476091 98		
0,66	**0,862366809216305315748430888786 1**	**0,109227240922668732326600953453 11**	
	Δ(1620) /D: 0,863717686849149502445376442154 15		
	Ξ $_c^{\prime +}$ /He-3: 0,917115916137946397430451716620 87		
	Ξ $_c^{\prime 0}$ /He-3: 0,917934896805409231998742615420 46		
0,67	**0,921640405781419170451508935821 96**	**0,111626021638244577547121160789 22**	
	$Λ_c$ (2595)$^+$ /He-3: 0,924023840028719871615166254321 77		
	$η_c$(2S) 3638,9/α: 0,976262345658178854910400799463 59		
0,68	**0,985565716811635179050177697922 15**	**0,114031888653262794811549530609 6**	
	$Ω_c$ (2770) ^{0} /He-3: 0,986337586466109458332952032551 56		
	938,272046 /n0 : 0,998623478439836679465215458375 48		
Electron 0,6821555671006273161671553	**e/e: 1,000000000000000000000000254029 4**	**/e: 0,114551385035970519154979913801 89**	

	0,5109989099724959839612738895571 4 MeV Electron	**58,535632889220622949041233701 99 keV**	
	939,565378 /p+ : 1,0013784189836132025188779843495		
	Δ(1905) /D: 1,0156680206466850630607667421628		
	Δ(1910) /D: 1,0183338159764663886855981509348		
Neutron 0,68499502942048864	**η′(958)/n0**: : **1,019**38622070632416773840715613 82 **Eta prime meson η′(958) 957,78 MeV/c^2**	**γ ? /n0** : **0,1152361746771315747676385 56 108,27192004399275268448921 MeV/c^2 f = 2,6180034928167789612963 78e+22Hz …gamma rays γ + γ**	**π+ + π− + η** or **(ρ0 + γ) / (π+ + π− + γ) or π0 + π0 + η**
	η′(958)/n0 : 1,019620371750224282955645477 1793		
	Σ (1915) /D: 1,020999611306247714310429559 7069		
	χ_{c2}(2P)3927,2 /α: 1,053608915845118029900279210 6553		
0,69	**1,054623470109958103699633028 0769**	**0,116444505266343050816554103 93942**	
	Ξ $_c$(2980) /He-3: 1,061114082190976962394294966 4273		
	D_s^{*+} 2112,3 /D: 1,126191895019418823466276949 8532		
0,7	**1,129360529007397340710587115 5715**	**0,118863545179817455055072574 95347**	
	X (4260) /α: 1,142894169255500816707880789 7208		
	Ω(2250)/D: 1,199607898401596531174133947 4363		

0,71	**1,21040150606734817638866843333 8**	**0,12128869215199537534833031800 16**	
	χ_{c0}(1P) 3414,75/He-3: 1,21591923226900623568319420691 53		
	D_{s0}^{*} (2317)$^{+}$/D: 1,23532955582066629454687482498 22		
Proton 0,713	**c quark / p: 1,23604749426877325552441352943 1 c quark: 1160 MeV 1.16–1.34 GeV**	**s quark / p: 0,12201738104659464824870350196726 s quark=114,485493763640 MeV**	
	h_1 (1170) /n0 : 1,24525661268033654598967140741 11		
	η_c(2S) 3638,9 /He-3: 1,29573423949152552632771810514 51		
0,72	**1,29846289561568398447526264841 94**	**0,12371963966257097659690524224231**	
	Σ_c (2455) /D: 1,30890550692263088179222170709 16		
	Δ(1232) /p+ : 1,31305201434083862709472642649 74		**p+ + π+**
	b_1 (1235) /n0 : 1,31443753560702190965576426337 84		
	K_1 , f_2 (1270) /p+ : 1,35355199530265020812524558575 63		
Proton 0,72585	**c quark / p: 1,35355827716301434378382094041 84 c quark: 1270 MeV 1.16–1.34 GeV**	**s quark / p: 0,12514431408438967945446850497659 s quark: 117,41941 MeV**	
	f_1 (1285) /n0 : 1,36765363016601065093737415258 4		
	X (3915) /He-3: 1,39404752744217275428646469582 65		

0,73	**1,394370383719941409853456505102 6**	**0,126156090590612434388846958841 05**	
	χ_{c2}(2P)3927,2 /He-3: 1,398391685765236485474790332937 4		
	B $^{+}$ 5279,15/α: 1,416316843573985243315354195083 2		
	B ^{0} 5279,50/α: 1,416410743329675249250999208763 1		
Proton 0,73333	**c quark / p: 1,428157273269882586967801846816 3 c quark: 1340 MeV 1.16–1.34 GeV**	**s quark / p: 0,126968600233165927497518619193 07 s quark= 119,1311MeV**	
	B * 5325,1/α: 1,428644540071001736866463848202 4		
	Λ , η(1405) /p+ : 1,497433506614349245996826809439		
0,74	**1,499080198187236831280890499808 6**	**0,128597756904598579499996366431 36**	
	K *(1410)/n0 : 1,500693866563482504141398875598		
	Ξ $_{c}$(2815) /D: 1,500842770666886326780083138681 4		
	K *(1410) /p+ : 1,502762451477745506658737225131		
Alpha particle 0,740795108978806110189	**Λ0b5620,2/α: 1,507815448**036779679174754609374 5 **bottom Lambda Λ0b 5620,2MeV/c^2**	**/α: 0,128792111445433901352418448281 14 480,057042583086248078468247 MeV/c^2**	**See Λ0b decay modes**
	Λ_b^0 = 5620,2 Λ_b^0/α: 1,507815448368489598606016810889 4		
	f_0 (1500) /p+ : 1,598683459018878198573124707586 1		

0,75	**1,613705638880109381165535757083 6**	**0,131044359363994114842317071955 4**	
	N(1520) /n0 : 1,617769274593257734960940631850 3		
	J/ψ (1S) 3096,916 /D: 1,651148841905012765750077425759 4		
Alpha particle 0,753304289775682	**Ω−b /α: 1,6539771**2486152569697027902330 76 **bottom Omega Ω−b 6165 MeV/c^2**	**K+ /α: 0,131853826242866291292162163866 84 491,469214760347149777348383170 31 MeV/c^2 2,20778523965285 MeV/c^2** less than **K+ mezón 493,677 MeV/c^2**	**(Ω− +J/ψ seen)**
		K+ 493,677/α: 0,132446141970785886546924052729 34	**μ+ + νμ or π+ + π0 or π0 + e+ + νe**
	X (4660) /He-3: 1,659326047989916994885038437433 3		
	Δ(1620)/n0 : 1,724201463711235217524160410261 5		
	Δ(1620)/p+ : 1,726578135740388454458974684193		
0,76	**1,739550311026520918277625358595**	**0,133495627231878595513070972610 93**	
		K0, K0S, K0L 497,614/α: 0,133502380079790324743022392323 03	**π± + e∓ + νe or π± + μ∓ + νμ or π0 + π0 + π0 or π+ + π0 + π−**
	η_2(1645) /n0 : 1,750809510990729588164965354864 3		
	Σ (1750) /n0 : 1,862563309564605944856346122196 1		
	Σ (1750) /p+ : 1,865130702188691231668645492183 8		

		f_0 (500)/α: 0,13414250812857990806430525700948	
	χ_{c1}(1P) 3510,66 /D: 1,87174020649002172361412670395 86		
0,77	**1,87815011689758006190120470505 02**	**0,13595129799816715250638614760118**	
	h_c(1P) 3525,41 /D: 1,87960430271287663420737935983 62		
	Δ(1905) /p+ : 2,03032799295397531218786837863 44		
0,78	**2,03132681282476993998864733550 91**	**0,13841111711298254374400857298402**	
	Δ(1910) /n0 : 2,03285481215336991695749776765 4		
	f_4 (2050) /n0 : 2,18185987691853839254600545742 97		
	f_4 (2050)/p+ : 2,18486739399246687138327043370 11		
0,79	**2,20125701364009353322651983290 17**	**0,14087483772975860020886062679793**	
	ψ (4160) /D: 2,21794171437806291985973209837 12		
	N(2220) /p+ : 2,36605151934793973388822456722 75		
	X (4660) /D: 2,48452124735619548234287297557 92		
0,8	**2,39056208756589962539924066677 38**	**0,14334222045767456374528669617442**	
	N(2250) /n0 : 2,39472425515449335767244501425 21		
	ϒ(1S) 9460,30/α: 2,53805673929760900852149404577 36		

	$D_0^*(2400)^0$ /n0 : 2,554372538831459581517274681 8689		
		π0 134,9766 /n0 : 0,1436585501770159947294269 0742698	
		π0 134,9766 /p+ : 0,1438565718497383433716834 8293731	
	$D_0^*(2400)^0$ /p+ : 2,557893534430205117716999 5321378		
	Δ, $D_1(2420)^0$ /n0 : 2,575658976655055078029918 6375512		
	Δ, $D_1(2420)^0$ /p+ : 2,579209313883790160364641 1949056		
0,81	**2,602426687915191197236202417256**	**0,1458130331230382462064190 4639135**	
Neutron 0,8103668245118	**Σ+c//n0 : 2,610675166**291363936442125449781 3 **2452,9 MeV/c^2**	**(π0/n0: 0,1436585501770159947294269) (π+ /n0 : 0,1485475979299) 0,1459037308768114306373953569888 6137,0860940835213867456755499585 3 MeV/c^2** ..... **pion pi π0**	**Λ+c + π0**
	Σ_c (2455) /n0 : 2,612910242846347196927045559995 1		
Proton 0,8105263656822	**Σ+c/ p+ : 2,614273770**499822082725714459394 2 **2452,9 MeV/c^2**	**0,1459431789448380519219438015 63 136,9344051389653876938724338931 4 MeV/c^2** ..... **pion zero π0**	**Λ+c + π0**
	Σ_c (2455) /p+ : 2,616511927927563984998014104 7493		
	D_{s1} , $D^*_{2}{}^+$,$D^*_{2}(2460)^0$ /n0 : 2,618231852302246071055206548 9156		
	Ξ $_c$(2645)/p+ : 2,819011832736621890150609901 0436		

	ϒ(4S)10579,4 /α: **2,838294500990996558751022072012**2		
	B * 5325,1/D: **2,8391253421237074169579469704414**		
0,82	**2,840757127463628879727295241490**1	**0,14828705053925343308953994654**85	
	B $_S^0$ 5366,3 /D: **2,861091495641105540106557778723**4		
Neutron **0,821091179644426**	**<u>Ω0c</u> //<u>n0</u> :** **2,8685603**60466584076602721885217**7** **Charmed Omega Ω0c 2695,2 MeV/c^2**	**<u>π+</u> /<u>n0</u> :** **0,14855719485567454693134509431545** **139,57**91969703885220522196484445**3** **MeV/c^2** ..... **pion pi +-, π +,π –** **<u>π</u> - = 139,57018 +- 0,00035 MeV/c^2**	**See Ω0c decay modes**
	$Ω_c^0$ /n0 : **2,868560361107729110043899467738**8		
	$Ω_c^0$ = 2695,2 **$Ω_c^0$ /p+ :** **2,872514439165120347196190474590**8		
Proton **0,8212451756**	**Ω0c / p+ :** **2,872514439165120347196190474590**8 **2,872514499307888530047789439106** **2,695.2±1.7 MeV/c2** **6,9±1.2×10−14 s**	**Proton** **v/c= 0,82188** **π+ / p+ :** **0,14875235875885830238195117240016** **139,57017509117216095767602139546….** **MeV/c2 139,57 = π- +**	**See Ω0c decay modes**
	B $_S^*$ 5415,4/D: **2,887269605779558157742402212865**2		
Proton **0,82188** **Δ particles** Δ(1232) P_{33} **** Δ(2750) $I_{3,13}$ **	**/p+ :** **2,8**88894880564111039646617101928**4** **2710,5692149 MeV/c^2** **Nucleons** p P_{11} **** N P_{11} ****	**π+ / p+ :** **0,14875235875885830238195117240016** **139,57017509117216095767602139546….** **MeV/c^2 139,57 = π- +**	

	N(2700) $K_{1,13}$ ** Δ(2750) $I_{3,13}$ **		
	ϒ(10860)/α: 2,913575276552755603156710182245 9		
	Ω_c (2770) ^{0} /n0 : 2,948171638567976267001187861990 4		
	Ω_c (2770) ^{0}/p+ : 2,952235454321528406698370293342 4		
	ϒ(11020)/α: 2,956500879153901173737287864488 9		
		π+ 139,57018 /n0 : 0,148547597929901584772954458524 12	
		π+ 139,57018 /p+ : 0,148752358758858302381951172400 16	
	Ξ $_c$(2790) /n0 : 2,969458076391571763513831817672 6		
	Σ* $_b$ $^+$ /D: 3,107784195459069413428456346491 7		
	B $_{S1}$ (5830)^0/D: 3,108317354525025678553422628246 1		
0,83	**3,110396099244595300448845826151 5**	**0,150764054285023561181689682345 53**	
	Σ* $_b$ $^-$ /D: 3,111729572547145775353206831474 4		
	J/ψ (1S) 3096,916/p+ : 3,300658922113938796808191384612 6		
	B$^+$$_C$ 6277/D: 3,346639457007476189413350572470 1		
	ϒ(1S) 9460,30 /He-3: 3,368609916695066898435821701641 7		

0,84	**3,417418536251689869632945576464**	**0,153243832490459468413770634642 08**	
	χ_{b0}(1P) 9859,44 /He-3: 3,5107351095694650678217475046282		
	ϒ(4S)10579,4 /He-3: 3,7670974231983965355551020697386		
0,85	**3,769546681780785364626688327446 7**	**0,155726179630773991473412635429 45**	
	χ_{c2}(1P) 3556,20 /n0 : 3,7849415094135152349132217598593		
	X (3915)/p+ : 4,1725638280392720982758554867998		
0,86	**4,176744286484310103629459098389 8**	**0,158210896327260416340067375704 87**	
Proton 0,8665	***bottom quark* /p 4,476313841592169302436394 4,2 GeV *Bottom quark***	**/p 0,159827140990503087217669575 149,961333345954387954253111409 44 MeV**	
	X (4260) /n0 : 4,534011256425840757193162560317 3		
	X (4360) /p+ : 4,646839920881539297185882483383 7		
0,87	**4,652086863781137675709812224504 3**	**0,160697789155265309751431115346 53**	
	ϒ(1S) 9460,30/D: 5,043844711666054961718515281303		
0,88	**5,213069797133242275527059903803 5**	**0,163186670458879114215176684170 86**	
	ϒ(11020) /D: 5,875412906838041677128424933665 9		
0,89	**5,883634177719370085116869759505 5**	**0,165677358172080111784206073942 56**	
	B^{+}_{C} 6277/p+ : 6,689957381507665634962335859678 8		

0,9	**6,697414907005954315982008545315 6**	**0,16816967564607898651735176667717**	
		K+ 493,677 /He-3: 0,17578779085697816572615045508085	
		K0, K0S, K0L 497,614 /He-3: 0,17718967211254389602848144141737	
		f_0 (500) /He-3: 0,17803927553539881919367365208512	
0,99	**94,39482981401190863196401709063 2**	**0,19064720155047137913293235234825**	
Proton 0,994637	***Top quark* /p: 180,22492157457995929571290469898 *Top quark:* 169 100MeV**	**/p: 0,19180643378644112290601029593852 179,96660877927080426588414 8 MeV**	
Proton 0,994766	***Top quark* /p: 184,80781431716241834344540316264 *Top quark:* 173 400MeV**	**0,19183868355887822897300444041866 179,99686783818157713891779163 MeV**	
Electron 0,995308032046	**Muon/e: 206,76828223744685656745189701043 Muon 105,658366838 MeV = = kinetic energy of elektron in direction of motion of electron**	**Muon neutrino /e: 0,19197419073094806197627099443559 Muon neutrino 98,09860220636650171560146311 6988 keV = kinetic energy of elektron against direction of motion of electron < 170 keV**	
Electron 0,996425584251459554502	**π-/e- : 273,13204749023558573115849192 139,5701835 MeV/c^2 pi minus π- 139,57 MeV/c^2**	**νμ/e- : 0,19225357757678994895712344707072 98,24137206705239513171169380171 8 keV/c^2 = kinetic energy of elektron against direction of motion of electron < 170 keV Muon neutrino νμ**	**μ+ + νμ**
0.999	**992,09224472101786294794602563595**	**0,19289718058079427713077657976 81**	
Electron 0,99971316674	**Tauon/e: 3477,18894397593998486635332040 24**	**neutrino /e: 0,19307547223543705549505792712 01**	

	Tauon 1776,84±0.17 MeV = kinetic energy of elektron in direction of motion of electron	**Muon neutrino 98,098832330615474551604782917292 keV = kinetic energy of elektron against direction of motion of electron < 170 keV Tauon neutrino ν_τ < 15.5 MeV**	
0.9999	**9989,78965962802381726392803418 13**	**0,193122180559966144431315920999989**	
0.99999	**99987,48707453502977157991004272 7**	**0,193144680559945330250721705729 02**	
Electron 0,99999364465781184	**W+ BOSON/e: 157334,97358013414086695519224486 W+ BOSON = 80 398±0,25 MeV**	**neutrino/e: 0,193145591724398274765062819532 88 Muon neutrino 98,697186837160259358230511606622 keV < 170 keV Tauon neutrino ν_τ < 15.5 MeV**	**0,99999364465781184**
Electron 0,999994396590953	**BOSON Z/e: 178449,69572422000527027492336062 BOSON Z = 91 187,6 MeV = 91, 187,6 GeV**	**neutrino/e: 0,193145779707683563082599992534 41 Muon neutrino 98,697282896414134737232447312 57 keV < 170 keV Tauon neutrino ν_τ < 15.5 MeV**	
0.999999	**999985,18448944203572589589205127**	**0,193146930559945309438065470416 02**	
0.9999999	**9999982,88190434904168021187405 98**	**0,193147155559945309417252954792 13**	
0.99999999	**99999980,57931925604763452785606 8**	**0,193147178059945309417232142291 51**	

Conclusion:

All movements in physics are based on principle of **action - reaction** and on velocity of stable particles (**e-, p+,n0, D, He-3, α**).
Action creates unstable particles (leptons, baryons, mesons) in direction of motion of stable particles (e-, p+,n0, D, He-3, alfa).
Reaction creates unstable particles (neutrínos, mesons and baryons) against direction of motion of stable particles (e-, p+,n0, D, He-3, alfa).
Accompanying activity of reaction on movement of stable particles in environment is wave.

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