

20091128
Heim's Mass Formula 1989 b

T1 :=

k

P

Q

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"η"

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"K+"

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"K0"

"/K+"

"e0"

"/e-"

"e-"

"/e0"

"μ-"

"/μ-"

"π+-"

"/π+-"

"π0"

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"Σ-"

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"o++"

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"o+"

"/o0"

"o0"

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"o-"

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hb = 1.0545887 × 10⁻³⁴

c = 2.99792458 × 10⁸

γ = 6.6732 × 10⁻¹¹

R = 376.73037659

μ = 2.25902134 × 10⁻³¹

KG2MEV = 5.60954107 × 10²⁹

ε = 1 N = 0

i := 0..14

$$T2_{i, \left(\frac{1-\epsilon}{2} \right)} =$$

	0
0	"η"
1	"K+"
2	"K0"
3	"e0"
4	"e-"
5	"μ-"
6	"π+ -"
7	"π0"
8	"Λ"
9	"Ω-"
10	"p"
11	"n"
12	"Ξ0"
13	"Ξ-"
14	"Σ+ "

a1	a2	y	a3	x	L	H	B	g	A
$a1(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4}, T1_{i,5}, T1_{i,6}, T1_{i,7}, T1_{i,8}, T1_{i,9}, T1_{i,10}, T1_{i,11}, T1_{i,12}, T1_{i,13}, T1_{i,14}) =$									
28	33	0.82070944	48.65020478	1.26786277	0	9	27	38.71653131	2787.59025436
16	31	0.07250499	7.26890935	1.15613871	0	9	27	38.71653131	2787.59025436
22	17	10.16509758	98.29474094	1.20831022	0	9	27	38.71653131	2787.59025436
34	28	2.5	77.11059908	0.3222001	1	9	27	38.71653131	2787.59025436
35	11	5	89.96774194	0.32711755	1	9	27	38.71653131	2787.59025436
1	23	0.07250499	7.26890935	0.01519221	0	9	27	38.71653131	2787.59025436
25	0	7.75	95.62488479	0.23170921	0	9	27	38.71653131	2787.59025436
22	2	0	-0.03225806	0.20421803	0	9	27	38.71653131	2787.59025436
13	45	0	-0.03333333	0.13332095	0	104	26	14727.57867052	14727.57867052
47	3	2.03846154	69.73881857	0.45260181	0	104	26	14727.57867052	14727.57867052
0	23	4.26923077	84.22944039	0.00440272	0	104	26	14727.57867052	14727.57867052
0	36	35.92307692	101.15	0.00683665	0	104	26	14727.57867052	14727.57867052
26	22	2.21557635	71.62409767	0.25419539	0	104	26	14727.57867052	14727.57867052
26	25	0.17711481	15.61504719	0.25465054	0	104	26	14727.57867052	14727.57867052
21	30	0.33653846	26.15371703	0.20751692	0	104	26	14727.57867052	14727.57867052

i := 15..20

$$T2_{i, \left(\frac{1-\epsilon}{2} \right)} = \begin{pmatrix} \text{"Σ0"} \\ \text{"Σ-"} \\ \text{"o++"} \\ \text{"o+"} \\ \text{"o0"} \\ \text{"o-"} \end{pmatrix}$$

a1	a2	y	a3	x	L	H	B	g	A
$a1(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4}, T1_{i,5}, T1_{i,6}, T1_{i,7}, T1_{i,8}, T1_{i,9}, T1_{i,10}, T1_{i,11}, T1_{i,12}, T1_{i,13}, T1_{i,14}) =$									
21	46	4.17307692	83.86257745	0.2105781	0	104	26	14727.57867052	14727.57867052
21	47	9.98076923	94.49556334	0.21078192	0	104	26	14727.57867052	14727.57867052
21	27	2.03846154	69.73881857	0.20703968	0	104	26	14727.57867052	14727.57867052
23	27	3.94230769	82.92386511	0.22629389	0	104	26	14727.57867052	14727.57867052
23	39	9.19230769	93.76289308	0.22853209	0	104	26	14727.57867052	14727.57867052
23	22	0.27884615	22.6433584	0.22526215	0	104	26	14727.57867052	14727.57867052

i := 0..14

$$T2_i, \left(\frac{1-\epsilon}{2} \right) =$$

	0	k	n	m	p	σ	P	Q	εq	εC	κ	l	WN0	M
		$T1_{i,0} =$	$n(T1_{i,0},$	$m(T1_{i,0},$	$p(T1_{i,0},$	$σ(T1_{i,0},$	$T1_{i,1} =$	$T1_{i,2} =$	$ε \cdot ql(T1_i$	$ε \cdot C(T1_i$	$T1_{i,3} =$	$T1_{i,4} =$	$WN0(T1_{i,0}, T1_{i,1}, T1_{i,2},$	$M(T1_{i,0}, T1_{i,1}, T1_{i,2},$
0	"η"	1	18	22	17	14	0	0	0	0	0	1	9905.00602463	548.80002508
1	"K+"	1	17	26	30	28	1	0	1	1	1	1	8857.95768621	493.71425225
2	"K0"	1	18	5	5	2	1	0	0	1	1	2	9332.35821061	497.7230005
3	"e0"	1	0	0	0	1	1	1	0	0	0	1	38.51308636	0.51617049
4	"e-"	1	0	0	0	0	1	1	-1	0	0	2	38.70293897	0.51100343
5	"μ-"	1	11	6	11	6	1	1	-1	0	1	1	2830.26323296	105.6594852
6	"π+ -"	1	12	9	2	3	2	0	1	0	0	1	3514.46295282	139.56837122
7	"π0"	1	12	3	6	4	2	0	0	0	0	2	3419.16218078	134.96004137
8	"Λ"	2	1	3	0	-11	0	1	0	-1	0	1	16827.97669238	1115.5997914
9	"Ω-"	2	4	4	-1	-15	0	3	-1	-3	0	1	23157.61439275	1672.17518902
10	"p"	2	0	0	0	0	1	1	1	0	0	1	14792.56299378	938.27959207
11	"n"	2	0	0	-2	17	1	1	0	0	0	2	14828.61091953	939.5733612
12	"Ξ0"	2	2	6	-1	6	1	1	0	-2	1	1	18990.08936297	1314.9020623
13	"Ξ-"	2	2	7	-17	2	1	1	-1	-2	1	2	18998.73467029	1321.29325942
14	"Σ+ "	2	2	-7	-12	10	2	1	1	-1	0	1	18124.03125772	1189.37409873

i := 15..20

$$T2_i, \left(\frac{1-\epsilon}{2} \right) = \begin{pmatrix} \text{"Σ0"} \\ \text{"Σ-"} \\ \text{"o++"} \\ \text{"o+"} \\ \text{"o0"} \\ \text{"o-"} \end{pmatrix}$$

k	n	m	p	σ	P	Q	εq	εC	κ	l	WN0	M
$T1_{i,0} =$	$n(T1_{i,0},$	$m(T1_{i,0},$	$p(T1_{i,0},$	$σ(T1_{i,0},$	$T1_{i,1} =$	$T1_{i,2} =$	$ε \cdot ql(T1_i$	$ε \cdot C(T1_i$	$T1_{i,3} =$	$T1_{i,4} =$	$WN0(T1_{i,0}, T1_{i,1}, T1_{i,2},$	$M(T1_{i,0}, T1_{i,1}, T1_{i,2},$
2	2	-7	-14	-2	2	1	0	-1	0	2	18179.5972907	1192.47794853
2	2	-6	-5	-8	2	1	-1	-1	0	3	18183.3029723	1197.30443156
2	2	1	9	4	3	3	2	0	0	1	18115.38381347	1232.916617
2	2	-1	-1	-6	3	3	1	0	0	2	18467.56082197	1234.60980981
2	2	-1	-10	2	3	3	0	0	0	3	18508.94133072	1233.76682519
2	2	-1	-16	-15	3	3	-1	0	0	4	18448.51702782	1229.99529778

i := 0..14

$$T2_{i, \left(\frac{1-\epsilon}{2} \right)} =$$

	0
0	"η"
1	"K+"
2	"K0"
3	"e0"
4	"e-"
5	"μ-"
6	"π+ -"
7	"π0"
8	"Λ"
9	"Ω-"
10	"ρ"
11	"n"
12	"Ξ0"
13	"Ξ-"
14	"Σ+ "

D	F	s	b1	b2	y	φ
$D(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$F(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$s(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$b1(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$b2(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$y(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$\varphi(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$
0	1.08117012·10 ⁻⁸	-5	0	7875.375	2.62731223·10 ⁻⁹	5.0661201
1.59930372·10 ⁻¹⁸	1	1	5	5945	184.84508113	-40.78574084
1.59930372·10 ⁻¹⁸	1	1	13	6470	147.94249899	-12.73395845
1.59930372·10 ⁻¹⁸	1	3	7	1809	-53.97104728	0
1.59930372·10 ⁻¹⁸	1	3	5	1809	-51.74063646	0
1.59930372·10 ⁻¹⁸	1	2	303	1809	1086.93017266	2.57120917
1.27944298·10 ⁻¹⁷	1	1	14	2147	17.08389281	-2.32863274
6.39721489·10 ⁻¹⁸	1.08117012·10 ⁻⁸	1	2	250	3.70003761·10 ⁻⁸	-5.12094075
0	1	0	0	1039.75108443	0.06178705	0
0	1	7	1	186.18139016	0.09369551	-137.03603953
1.59930372·10 ⁻¹⁸	1	4	1	-3228.5	17.31698088	9.28034065
1.59930372·10 ⁻¹⁸	1	4	100	-39.49132459	1228.02192051	11.16885474
1.59930372·10 ⁻¹⁸	1	1	0	18740.50867541	0.20184737	90.44613386
1.59930372·10 ⁻¹⁸	1	1	0	18138.5	0.10666705	23.44132327
1.27944298·10 ⁻¹⁷	1	3	1	3784.5	0.04603481	-6.00947748

i := 15..20

$$T2_{i, \left(\frac{1-\epsilon}{2} \right)} = \begin{pmatrix} \text{"Σ0"} \\ \text{"Σ-"} \\ \text{"o++"} \\ \text{"o+"} \\ \text{"o0"} \\ \text{"o-"} \end{pmatrix}$$

D	F	s	b1	b2	y	φ
$D(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$F(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$s(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$b1(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$b2(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$y(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$	$\varphi(T1_{i,0}, T1_{i,1}, T1_{i,2}, T1_{i,3}, T1_{i,4})$
6.39721489·10 ⁻¹⁸	-1.08117013·10 ⁻⁸	3	15.28571429	17283.9042795	2.11633901·10 ⁻⁶	11.78154012
1.27944298·10 ⁻¹⁷	1	3	2	1027	0.06836882	-2.01125286
3.19860745·10 ⁻¹⁸	0	13	1	-6103.9604332	0	-1336.23658467
4.31812005·10 ⁻¹⁷	0	13	1	-761.16305902	0	-595.90428409
1.43937335·10 ⁻¹⁷	0	13	1	-1305.79179019	0	-957.16132713
4.31812005·10 ⁻¹⁷	0	13	2	-25578.66305902	0	-520.30313618