

”Computer-readable files of RPP particle properties”

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Mass & Width table production

pdg.lbl.gov > Downloads > Tables of particle information

- Standard format table

A table of masses, widths, and PDG Monte Carlo particle ID numbers is produced around Summer of even-numbered years after production of the RPP.

- Extended format table

upgraded mass-width table with expanded content and improved format

Mass & Width table production

- Standard format:

Mass + Width + PDG Monte-Carlo ID + Charge

```

M  211  1.3957018E-01  +3.5E-07  -3.5E-07  pi  +
W  211  2.5284E-17    +5.0E-21  -5.0E-21  pi  +

```

restrictions:

- (1) only particles from 'Summary tables'
- (2) PDG Monte-Carlo ID restriction

\pm	n	n_r	n_L	n_{q_1}	n_{q_2}	n_{q_3}	n_J
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$$n_J = 2J + 1$$

Mass & Width table production

- Extended format:

Mass + Width + PDG Monte-Carlo ID + Charge

+ IGJPC

+ quark content

+ status/rating

+ antiparticles

line example:

```
1.349766E+02,6.0E-04,6.0E-04,7.8E-06 ,6.0E-07,6.0E-07,1,-,0,-,+,,111,0,,R,pi
```

- Imports to MS Excel, OpenOffice Calc, Mathematica

Mass & Width table production

- Extended table contains all of RPP particles

	standard table	extended table
Total / multiplets,singlets	286/185	632/404
Summary Tables	286/185	311/195
Omitted from Summary	0/0	222/110
Further States	0/0	99/99

Mass & Width table production

- Extended format

M,W,errors	mass, width and their errors in MeV
IGJPC	IGJPC quantum numbers
A	Antiparticle/particle flag: B, F, blank
MC-Id	PDG Monte-Carlo ID
Chrg	Electric charge
R	Rank: 1,2,3,4,blank

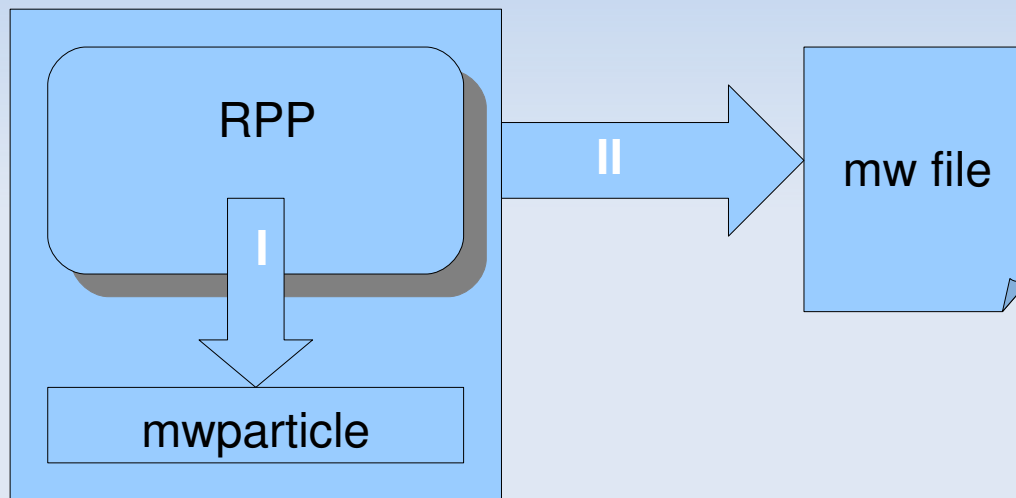
Mass & Width table production

- Extended format

S	Particle status, omit type: R, D, S, F
Name	ascii name
Quarks	Quark content; 'Quark model','CP viol. in KL decays'
pt	Particle type: 1,2,3
rad	Radial excitation number
LIJ	Partial wave

Mass & Width table production

- Table production process



MWPARTICLE table (Step I):

- 1) Mass, width and lifetime RPP locations (Q007TP, Q123)
- 2) Indicator 'A'
- 3) Assembles charges, quark contents, etc

Mass & Width table production

- Operations with RPP data, formatting (step II)
 - 1) rounding
 - 2) number transformation (number to number)
 - 3) text transformation (text to number)
 - 4) lifetime to width transformation

origin	value	pos. error	neg. error	observable
range(400-1200)	8.0E+02	4.0E+02	4.0E+02	$f_0(600)$ mass
40 to 100	7.0E+01	3.0E+01	3.0E+01	$f_0(980)$ width
1700 to 1720 to 1750	1.720E+03	3.0E+01	2.0E+01	$N(1720)$ mass
<6.5	6.5	-1	-1	$\chi_{c0}(2815)$ width
1798 OR 1802	1792	-1	-1	$\Sigma(1840)$ mass

Mass & Width table production

<http://dbcompas.ihep.su:8080/mw/>

- Search
- Links to pdgLive
- Archive (1990 – 2008)
- gnuplot; Mass/Spin patterns

Mass & Width table production

<http://dbcompas.ihep.su:8080/mw/>

RPP particle information extended table

Particle search Downloads Plots

Particle Search

Name (ascii)

Select year : 2008

Mass range: FROM (MeV) TO (MeV) | $^G J^{PC}$:

Width range: FROM (MeV) TO (MeV) $\pm S$ $\pm C$ $\pm B$

Particle type: Radial excitation number:

Quality status: Antiparticle identifier:

Electric charge: Baryon rating:

Quark content: Partial wave (LJ)

Additional SQL commands:

SUBMIT SEARCH RESET FILTERS computer-readable output

632 particles found

NAME	ASCII	M (MeV)	W (MeV)	I	G	J	P	C	N	T	A	PDGMC	CHRG	R	S	QUARKS	LJ
Y	gamma	0.0 + 0.0 - 0.0	0.0 + 0.0 - 0.0	<2	1	-	-	-	0			22	0			R	
W	W	80398.0 + 25.0 - 25.0	2140.0 + 40.0 - 40.0						0	B		24	+			R	
Z	Z	91187.6 + 2.1 - 2.1	2495.2 + 2.3 - 2.3						0			23	0			R	
e	e	0.51099891 + 1.3E-8 - 1.3E-8	0.0 + 0.0 - 0.0			1/2			0	B		11	-			R	
μ	mu	105.658367 + 4.0E-6 - 4.0E-6	2.995934E-16 + 2.9E-21 - 2.9E-21			1/2			0	B		13	-			R	
τ	tau	1776.84 + 0.17 - 0.17	2.265E-9 + 8.0E-12 - 8.0E-12			1/2			0	B		15	-			R	
u	u	2.4 + 0.9 - 0.9			1/2	1/2	+		0	F		2	+2/3			R u	

RPP particle information extended table

Particle search Downloads Plots

Downloads

EXTENDED FORMAT (CSV)
OLD FORMAT VERSION
SQL TABLE VERSION

Select year : 2008

Extras

MASS & WIDTH LINKS
CUSTOMIZED FORMAT

Plots

Select year : 2008

UNFLAVOURED MESONS M^2 (GeV²), IGJPC
FLAVOURED MESONS M^2 (GeV²), IGJPC
BARYONS M^2 (GeV²), IJP

UNFLAVOURED MESONS M^2 (GeV²), IGJPC PostScript

Mass & Width table production

- Next steps in interpreting RPP data in standartized computer readable formats:
 - Branching ratios table
 - table of synonyms (already done)
 - xml format
 - pdgLive summaries in computer readable form (xml)

pdgLive update (some new features/fixes)

(<http://dbcompas.ihep.su:8080/pdglive>)

- Links on first page
- First page popup-windows, ranks
- Meson summary, 'further states' listed
- Summary pages, section reference links
- Datablock pages, reference info popup links in footnotes and header texts
- Datablock pages, links on every particle in decays except cases with #text{...}

pdgLive update (some new features/fixes)

Baryon modes

Γ_{328}	$p\bar{p}$	$<1.1 \times 10^{-7}$	CL=90%	2467
Γ_{329}	$p\bar{p}\pi^+\pi^-$	$<2.5 \times 10^{-4}$	CL=90%	2406
Γ_{330}	$p\bar{p}K^0$			
Γ_{331}	$\Theta(1540)^+\bar{p} \times B$			
Γ_{332}	$f_J(2220)K^0 \times B$			
Γ_{333}	$p\bar{p}K(892)^0$			
Γ_{334}	$f_J(2220)K^0_0 \times B$			
Γ_{335}	$p\bar{\Lambda}\pi^-$			
Γ_{336}	$p\bar{\Sigma}(1385)^-$			
Γ_{337}	$\Delta^0\bar{\Lambda}$			
Γ_{338}	$p\bar{\Lambda}K$			
Γ_{339}	$p\bar{\Sigma}^0\pi^-$			
Γ_{340}	$\bar{\Lambda}\Lambda$			
Γ_{341}	$\Delta^0\bar{\Delta}^0$			
Γ_{342}	$\Delta^{++}\bar{\Delta}^{--}$			
Γ_{343}	$\bar{D}^0 p\bar{p}$			
Γ_{344}	$D_s^-\bar{\Lambda}p$			
Γ_{345}	$\bar{D}(2007)^0 p\bar{p}$			
Γ_{346}	$D^- p\bar{p}\pi^+$			
Γ_{347}	$D^{*-} p\bar{p}\pi^+$			
Γ_{348}	$\Theta_c^-\bar{p}\pi^+ \times B(\Theta_c \rightarrow D$			
Γ_{349}	$\Theta_c^-\bar{p}\pi^+ \times B(\Theta_c \rightarrow D$			
Γ_{350}	$\bar{\Sigma}_c^-\Delta^{++}$			
Γ_{351}	$\bar{\Lambda}_c^-\rho\pi^+\pi^-$			

pdgLive Decay Information - Mozilla Firefox 3 Beta 5

http://localhost:8080/prod/RPPdecinfo_links.br?parcode=S042&designator=307&clin=bb000

$B^0 \rightarrow \Theta(1540)^+\bar{p} \times B(\Theta(1540)^+ \rightarrow p K_S^0)$
 Baryon modes

Fraction Γ_{331} / Γ **Summary: $<5 \times 10^{-8}$** CL=90%

$\Gamma(\Theta(1540)^+\bar{p} \times B(\Theta(1540)^+ \rightarrow p K_S^0)) / \Gamma_{total}$ $<0.05 \times 10^{-6}$ CL=90% Γ_{331} / Γ

B^0 BRANCHING RATIOS

For branching ratios in which the charge of the decaying B is not determined, see the B^\pm section.

$\Gamma(\Theta(1540)^+\bar{p} \times B(\Theta(1540)^+ \rightarrow p K_S^0)) / \Gamma_{total}$ [References](#) [History since 2006](#)

VALUE (10^{-6})	CL%	DOCUMENT ID	TECN	COMMENT
<0.05	90	1 AUBERT	07AV BABR	$e^+ e^- \rightarrow Y(4S)$
*** We do not use the following data for averages, fits, limits, etc. ***				
<0.23	90	1 WANG	05A BELL	$e^+ e^- \rightarrow Y(4S)$

¹ Assumes equal production of B^+ and B^0 at the $Y(4S)$.