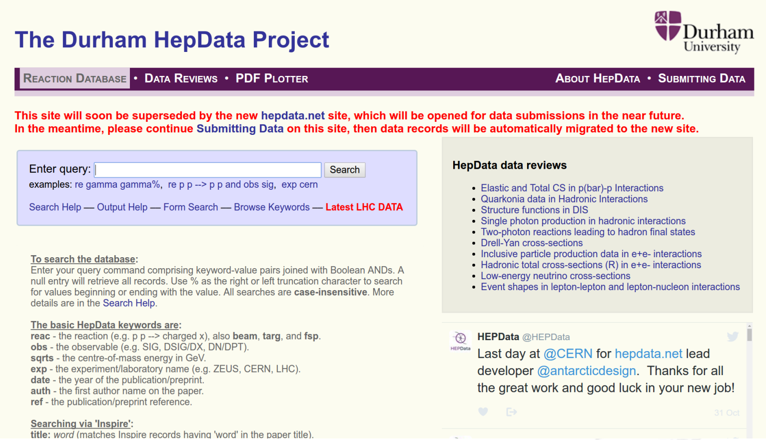
Submitting results to HepData

Marcin Chrząszcz
mchrzasz@cern.ch

University of Zurich[UZH]

Zurich meeting, CERN
November 2, 2016

HepData portal



The Durham HepData Project

Durham University

REACTION DATABASE • DATA REVIEWS • PDF PLOTTER | ABOUT HEPDATA • SUBMITTING DATA

This site will soon be superseded by the new hepdata.net site, which will be opened for data submissions in the near future.
In the meantime, please continue Submitting Data on this site, then data records will be automatically migrated to the new site.

Enter query: [ ] Search
examples: re gamma gamma%, re p p --> p p and obs sig, exp cern

Search Help — Output Help — Form Search — Browse Keywords — **Latest LHC DATA**

To search the database:
Enter your query command comprising keyword-value pairs joined with Boolean ANDs. A null entry will retrieve all records. Use % as the right or left truncation character to search for values beginning or ending with the value. All searches are **case-insensitive**. More details are in the Search Help.

The basic HepData keywords are:
reac - the reaction (e.g. p p --> charged x), also **beam**, **targ**, and **fsp**.
obs - the observable (e.g. SIG, DSIG/DX, DN/DPT).
sqrts - the centre-of-mass energy in GeV.
exp - the experiment/laboratory name (e.g. ZEUS, CERN, LHC).
date - the year of the publication/preprint.
auth - the first author name on the paper.
ref - the publication/preprint reference.

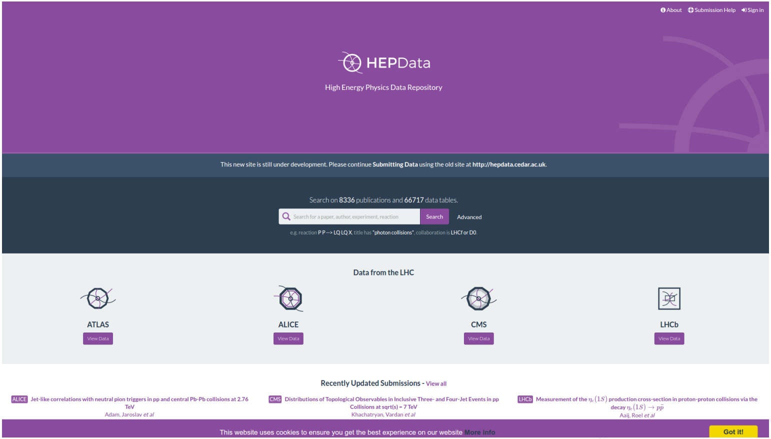
Searching via 'Inspire':
title: *word* (matches Inspire records having 'word' in the paper title).

HepData data reviews

- Elastic and Total CS in p(bar)-p Interactions
- Quarkonia data in Hadronic Interactions
- Structure functions in DIS
- Single photon production in hadronic interactions
- Two-photon reactions leading to hadron final states
- Drell-Yan cross-sections
- Inclusive particle production data in e+e- interactions
- Hadronic total cross-sections (R) in e+e- interactions
- Low-energy neutrino cross-sections
- Event shapes in lepton-lepton and lepton-nucleon interactions

HEPData @HEPData
Last day at @CERN for hepdata.net lead developer @antarcticdesign. Thanks for all the great work and good luck in your new job!
31 Oct

HepData portal



Why do we need HepData?

Download All

Filter 83 data tables

Table 1
Data from Appendix A, Table 3
10.17182/hepdata.74247.v1/t1
CP-averaged angular observables evaluated by the unbinned maximum likelihood fit.

Table 2
Data from Appendix A, Table 4
10.17182/hepdata.74247.v1/t2
CP-averaged angular observables evaluated by the unbinned maximum likelihood fit. The first uncertainties are statistical and the second systematic.

Table 3
Data from Appendix A, Table 5
10.17182/hepdata.74247.v1/t3
CP-asymmetric angular observables evaluated by the unbinned maximum likelihood fit. The first uncertainties are statistical and the second systematic.

Table 4
Data from Appendix A, Table 6
10.17182/hepdata.74247.v1/t4
Optimised angular observables evaluated by the unbinned maximum likelihood fit. The first uncertainties are statistical and the second systematic.

Table 5
Data from Appendix A, Table 7
10.17182/hepdata.74247.v1/t5
CP-averaged angular observables evaluated using the method of moments. The first uncertainties are statistical and the second systematic.

Table 6
Data from Appendix A, Table 8
10.17182/hepdata.74247.v1/t6
CP-asymmetries evaluated using the method of moments. The first uncertainties are statistical and the second systematic.

Table 7
Data from Appendix A, Table 9
10.17182/hepdata.74247.v1/t7
Optimised observables evaluated using the method of moments. The first uncertainties are statistical and the second systematic.

Table 2 10.17182/hepdata.74247.v1/t2

http://www.hepdata.net JSON

YAML
YODA
ROOT
CSV

CP-averaged angular observables evaluated by the unbinned maximum likelihood fit. The first uncertainties are statistical and the second systematic.

cmenergies: 7000.0-8000.0

observables: POL

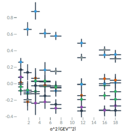
phrases: Inclusive, Polarization, Proton-Proton Scattering, Strange Production, Muon Production

reactions: P P --> B0 + X

RE	P P --> B0 < K*(892) < K+ PI- > MU+ MU- > X
SQRT(S)	7000.0 GeV
SQRT(S)	8000.0 GeV

q^2 [GEV**2]	F_L	S_3	S_4	S_5	A_{FB}	S_7	S_8	S_9
0.10 - 0.98	0.263 $^{+0.045}_{-0.044}$ stat ±0.017 sys	-0.036 ±0.063 stat ±0.005 sys	0.082 $^{+0.068}_{-0.069}$ stat ±0.009 sys	0.17 $^{+0.06}_{-0.06}$ stat ±0.02 sys	-0.003 $^{+0.058}_{-0.057}$ stat ±0.009 sys	0.015 ±0.059 stat ±0.006 sys	0.079 $^{+0.076}_{-0.075}$ stat ±0.007 sys	-0.083 $^{+0.058}_{-0.057}$ stat ±0.004 sys
1.10 - 2.50	0.66 $^{+0.08}_{-0.08}$ stat ±0.02 sys	-0.077 $^{+0.087}_{-0.105}$ stat ±0.005 sys	-0.077 $^{+0.111}_{-0.113}$ stat ±0.005 sys	0.137 $^{+0.099}_{-0.094}$ stat ±0.009 sys	-0.191 $^{+0.068}_{-0.080}$ stat ±0.012 sys	-0.219 $^{+0.094}_{-0.104}$ stat ±0.004 sys	-0.098 $^{+0.108}_{-0.123}$ stat ±0.005 sys	-0.119 $^{+0.087}_{-0.104}$ stat ±0.005 sys
2.50 - 4.00	0.876 $^{+0.109}_{-0.097}$ stat ±0.017 sys	0.035 $^{+0.098}_{-0.089}$ stat ±0.007 sys	-0.234 $^{+0.127}_{-0.144}$ stat ±0.006 sys	-0.022 $^{+0.110}_{-0.103}$ stat	-0.118 $^{+0.082}_{-0.090}$ stat ±0.007 sys	0.068 $^{+0.120}_{-0.112}$ stat ±0.005 sys	0.03 $^{+0.13}_{-0.13}$ stat ±0.01 sys	-0.092 $^{+0.105}_{-0.125}$ stat ±0.007 sys
4.00 - 6.00	0.611 $^{+0.052}_{-0.053}$ stat ±0.017 sys	0.035 $^{+0.069}_{-0.068}$ stat ±0.007 sys	-0.219 $^{+0.086}_{-0.084}$ stat ±0.008 sys	-0.146 $^{+0.077}_{-0.078}$ stat ±0.011 sys	0.025 $^{+0.051}_{-0.052}$ stat ±0.004 sys	-0.016 $^{+0.081}_{-0.080}$ stat ±0.004 sys	0.167 $^{+0.094}_{-0.091}$ stat ±0.004 sys	-0.032 ±0.071 stat ±0.004 sys
6.00 - 8.00	0.579 ±0.046 stat ±0.015 sys	-0.042 $^{+0.058}_{-0.059}$ stat ±0.011 sys	-0.296 $^{+0.063}_{-0.067}$ stat ±0.011 sys	-0.249 $^{+0.059}_{-0.060}$ stat ±0.012 sys	0.152 $^{+0.041}_{-0.040}$ stat ±0.008 sys	-0.047 $^{+0.068}_{-0.066}$ stat ±0.003 sys	-0.085 $^{+0.072}_{-0.070}$ stat ±0.006 sys	-0.024 $^{+0.059}_{-0.060}$ stat ±0.005 sys
11.00 - 12.50	0.493 $^{+0.049}_{-0.047}$ stat ±0.013 sys	-0.189 $^{+0.054}_{-0.058}$ stat ±0.005 sys	-0.283 $^{+0.084}_{-0.095}$ stat ±0.009 sys	-0.327 $^{+0.076}_{-0.079}$ stat ±0.009 sys	0.318 $^{+0.044}_{-0.040}$ stat ±0.009 sys	-0.141 $^{+0.072}_{-0.074}$ stat ±0.005 sys	-0.007 $^{+0.070}_{-0.072}$ stat ±0.005 sys	-0.004 $^{+0.070}_{-0.073}$ stat ±0.006 sys
15.00 - 17.00	0.349 ±0.039 stat ±0.009 sys	-0.142 $^{+0.044}_{-0.049}$ stat ±0.007 sys	-0.321 $^{+0.055}_{-0.074}$ stat ±0.007 sys	-0.316 $^{+0.051}_{-0.057}$ stat ±0.009 sys	0.411 $^{+0.041}_{-0.037}$ stat ±0.008 sys	0.061 ±0.058 stat ±0.005 sys	0.003 ±0.061 stat ±0.003 sys	-0.019 $^{+0.054}_{-0.056}$ stat ±0.004 sys
17.00 - 19.00	0.354 $^{+0.049}_{-0.048}$ stat	-0.188 $^{+0.074}_{-0.084}$ stat	-0.266 $^{+0.063}_{-0.072}$ stat	-0.323 $^{+0.062}_{-0.072}$ stat	0.305 $^{+0.049}_{-0.048}$ stat	0.044 $^{+0.073}_{-0.072}$ stat	0.013 $^{+0.071}_{-0.070}$ stat	-0.094 $^{+0.065}_{-0.067}$ stat

Visualize



Sum errors ☑ Log Scale (X) ☐

Deselect variables or hide different error bars by clicking on them.

Variables

F_L Summed error

S_3 Summed error

S_4 Summed error

S_5 Summed error

A_{FB} Summed error

The challenge

⇛ The $B \to K^{*}\mu\mu$ analysis has produced over 80 tables with results and correlation tables...

⇛ Theorists need all the correlation tables to make the global fit.

⇛ Reading the numbers form our tex files from all the theories groups is not really a nice way to do it:

⇛ Many thanks for Alex Grecu for help understanding how the HepData works!

Example:

$\Rightarrow$ The scripts I show here are not $100\ \%$ plug and play.
$\Rightarrow$ Each table in latex is a bit different and needs some special modification.
$\Rightarrow$ But to modify the scripts and apply them to your case should not be much work.

Example:

Table 4: CP-averaged angular observables evaluated by the unbinned maximum likelihood fit. The first uncertainties are statistical and the second systematic.

	$0.10 < q^2 < 0.98\,\mathrm{GeV}^2/c^4$	$1.1 < q^2 < 2.5\,\mathrm{GeV}^2/c^4$	$2.5 < q^2 < 4.0\,\mathrm{GeV}^2/c^4$
F_L	$0.263^{+0.045}_{-0.044} \pm 0.017$	$0.660^{+0.083}_{-0.077} \pm 0.022$	$0.876^{+0.109}_{-0.097} \pm 0.017$
S_3	$-0.036^{+0.063}_{-0.063} \pm 0.005$	$-0.077^{+0.087}_{-0.105} \pm 0.005$	$0.035^{+0.098}_{-0.089} \pm 0.007$
S_4	$0.082^{+0.068}_{-0.069} \pm 0.009$	$-0.077^{+0.111}_{-0.113} \pm 0.005$	$-0.234^{+0.127}_{-0.144} \pm 0.006$
S_5	$0.170^{+0.059}_{-0.058} \pm 0.018$	$0.137^{+0.099}_{-0.094} \pm 0.009$	$-0.022^{+0.110}_{-0.103} \pm 0.008$
A_{FB}	$-0.003^{+0.058}_{-0.057} \pm 0.009$	$-0.191^{+0.068}_{-0.080} \pm 0.012$	$-0.118^{+0.082}_{-0.090} \pm 0.007$
S_7	$0.015^{+0.059}_{-0.059} \pm 0.006$	$-0.219^{+0.094}_{-0.104} \pm 0.004$	$0.068^{+0.120}_{-0.112} \pm 0.005$
S_8	$0.079^{+0.076}_{-0.075} \pm 0.007$	$-0.098^{+0.108}_{-0.123} \pm 0.005$	$0.030^{+0.129}_{-0.131} \pm 0.006$
S_9	$-0.083^{+0.058}_{-0.057} \pm 0.004$	$-0.119^{+0.087}_{-0.104} \pm 0.005$	$-0.092^{+0.105}_{-0.125} \pm 0.007$

	$4.0 < q^2 < 6.0\,\mathrm{GeV}^2/c^4$	$6.0 < q^2 < 8.0\,\mathrm{GeV}^2/c^4$	$11.0 < q^2 < 12.5\,\mathrm{GeV}^2/c^4$
F_L	$0.611^{+0.052}_{-0.053} \pm 0.017$	$0.579^{+0.046}_{-0.046} \pm 0.015$	$0.493^{+0.049}_{-0.047} \pm 0.013$
S_3	$0.035^{+0.069}_{-0.068} \pm 0.007$	$-0.042^{+0.058}_{-0.059} \pm 0.011$	$-0.189^{+0.054}_{-0.058} \pm 0.005$
S_4	$-0.219^{+0.086}_{-0.084} \pm 0.008$	$-0.296^{+0.063}_{-0.067} \pm 0.011$	$-0.283^{+0.084}_{-0.095} \pm 0.009$
S_5	$-0.146^{+0.077}_{-0.078} \pm 0.011$	$-0.249^{+0.059}_{-0.060} \pm 0.012$	$-0.327^{+0.076}_{-0.079} \pm 0.009$
A_{FB}	$0.025^{+0.051}_{-0.052} \pm 0.004$	$0.152^{+0.041}_{-0.040} \pm 0.008$	$0.318^{+0.044}_{-0.040} \pm 0.009$
S_7	$-0.016^{+0.081}_{-0.080} \pm 0.004$	$-0.047^{+0.068}_{-0.066} \pm 0.003$	$-0.141^{+0.072}_{-0.074} \pm 0.005$
S_8	$0.167^{+0.094}_{-0.091} \pm 0.004$	$-0.085^{+0.072}_{-0.070} \pm 0.006$	$-0.007^{+0.070}_{-0.072} \pm 0.005$
S_9	$-0.032^{+0.071}_{-0.071} \pm 0.004$	$-0.024^{+0.059}_{-0.060} \pm 0.005$	$-0.004^{+0.070}_{-0.073} \pm 0.006$

	$15.0 < q^2 < 17.0\,\mathrm{GeV}^2/c^4$	$17.0 < q^2 < 19.0\,\mathrm{GeV}^2/c^4$
F_L	$0.349^{+0.039}_{-0.039} \pm 0.009$	$0.354^{+0.049}_{-0.048} \pm 0.025$
S_3	$-0.142^{+0.044}_{-0.049} \pm 0.007$	$-0.188^{+0.074}_{-0.084} \pm 0.017$
S_4	$-0.321^{+0.055}_{-0.074} \pm 0.007$	$-0.266^{+0.063}_{-0.072} \pm 0.010$
S_5	$-0.316^{+0.051}_{-0.057} \pm 0.009$	$-0.323^{+0.063}_{-0.072} \pm 0.009$
A_{FB}	$0.411^{+0.041}_{-0.037} \pm 0.008$	$0.305^{+0.049}_{-0.048} \pm 0.013$
S_7	$0.061^{+0.058}_{-0.058} \pm 0.005$	$0.044^{+0.073}_{-0.072} \pm 0.013$
S_8	$0.003^{+0.061}_{-0.061} \pm 0.003$	$0.013^{+0.071}_{-0.070} \pm 0.005$
S_9	$-0.019^{+0.054}_{-0.056} \pm 0.004$	$-0.094^{+0.065}_{-0.067} \pm 0.004$

Example:

RE	P P --> B0 < K*(892) < K+ PI- > MU+ MU- > X
SQRT(S)	7000.0 GeV
SQRT(S)	8000.0 GeV

q^2 IN GEV**2	F_L	S_3	S_4	S_5	A_{FB}	S_7	S_8	S_9
0.10 – 0.98	0.263 +0.045,-0.044 (stat) ± 0.017 (sys)	-0.036 ± 0.063 (stat) ± 0.005 (sys)	0.082 +0.068,-0.069 (stat) ± 0.009 (sys)	0.170 +0.059,-0.058 (stat) ± 0.018 (sys)	-0.003 +0.058,-0.057 (stat) ± 0.009 (sys)	0.015 ± 0.059 (stat) ± 0.006 (sys)	0.079 +0.076,-0.075 (stat) ± 0.007 (sys)	-0.083 +0.058,-0.057 (stat) ± 0.004 (sys)
1.1 – 2.5	0.660 +0.083,-0.077 (stat) ± 0.022 (sys)	-0.077 +0.087,-0.105 (stat) ± 0.005 (sys)	-0.077 +0.111,-0.113 (stat) ± 0.005 (sys)	0.137 +0.099,-0.094 (stat) ± 0.009 (sys)	-0.191 +0.068,-0.080 (stat) ± 0.012 (sys)	-0.219 +0.094,-0.104 (stat) ± 0.004 (sys)	-0.098 +0.108,-0.123 (stat) ± 0.005 (sys)	-0.119 +0.087,-0.104 (stat) ± 0.005 (sys)
2.5 – 4.0	0.876 +0.109,-0.097 (stat) ± 0.017 (sys)	0.035 +0.098,-0.089 (stat) ± 0.007 (sys)	-0.234 +0.127,-0.144 (stat) ± 0.006 (sys)	-0.022 +0.110,-0.103 (stat) ± 0.000 (sys)	-0.118 +0.082,-0.090 (stat) ± 0.007 (sys)	0.068 +0.120,-0.112 (stat) ± 0.005 (sys)	0.030 +0.129,-0.131 (stat) ± 0.006 (sys)	-0.092 +0.105,-0.125 (stat) ± 0.007 (sys)
4.0 – 6.0	0.611 +0.052,-0.053 (stat) ± 0.017 (sys)	0.035 +0.069,-0.068 (stat) ± 0.007 (sys)	-0.219 +0.086,-0.084 (stat) ± 0.008 (sys)	-0.146 +0.077,-0.078 (stat) ± 0.011 (sys)	0.025 +0.051,-0.052 (stat) ± 0.004 (sys)	-0.016 +0.081,-0.080 (stat) ± 0.004 (sys)	0.167 +0.094,-0.091 (stat) ± 0.004 (sys)	-0.032 ± 0.071 (stat) ± 0.004 (sys)
6.0 – 8.0	0.579 ± 0.046 (stat) ± 0.015 (sys)	-0.042 +0.058,-0.059 (stat) ± 0.011 (sys)	-0.296 +0.063,-0.067 (stat) ± 0.011 (sys)	-0.249 +0.059,-0.060 (stat) ± 0.012 (sys)	0.152 +0.041,-0.040 (stat) ± 0.008 (sys)	-0.047 +0.068,-0.066 (stat) ± 0.003 (sys)	-0.085 +0.072,-0.070 (stat) ± 0.006 (sys)	-0.024 +0.059,-0.060 (stat) ± 0.005 (sys)
11.0 – 12.5	0.493 +0.049,-0.047 (stat) ± 0.013 (sys)	-0.189 +0.054,-0.058 (stat) ± 0.005 (sys)	-0.283 +0.084,-0.095 (stat) ± 0.009 (sys)	-0.327 +0.076,-0.079 (stat) ± 0.009 (sys)	0.318 +0.044,-0.040 (stat) ± 0.009 (sys)	-0.141 +0.072,-0.074 (stat) ± 0.005 (sys)	-0.007 +0.070,-0.072 (stat) ± 0.005 (sys)	-0.004 +0.070,-0.073 (stat) ± 0.006 (sys)
15.0 – 17.0	0.349 ± 0.039 (stat) ± 0.009 (sys)	-0.142 +0.044,-0.049 (stat) ± 0.007 (sys)	-0.321 +0.055,-0.074 (stat) ± 0.007 (sys)	-0.316 +0.051,-0.057 (stat) ± 0.009 (sys)	0.411 +0.041,-0.037 (stat) ± 0.008 (sys)	0.061 ± 0.058 (stat) ± 0.005 (sys)	0.003 ± 0.061 (stat) ± 0.003 (sys)	-0.019 +0.054,-0.056 (stat) ± 0.004 (sys)
17.0 – 19.0	0.354 +0.049,-0.048 (stat) ± 0.025 (sys)	-0.188 +0.074,-0.084 (stat) ± 0.017 (sys)	-0.266 +0.063,-0.072 (stat) ± 0.010 (sys)	-0.323 +0.063,-0.072 (stat) ± 0.009 (sys)	0.305 +0.049,-0.048 (stat) ± 0.013 (sys)	0.044 +0.073,-0.072 (stat) ± 0.013 (sys)	0.013 +0.071,-0.070 (stat) ± 0.005 (sys)	-0.094 +0.065,-0.067 (stat) ± 0.004 (sys)
	Plot SelectPlot	Plot SelectPlot	Plot SelectPlot	Plot SelectPlot	Plot SelectPlot	Plot SelectPlot	Plot SelectPlot	Plot SelectPlot

Correlation tables

- ⇛ The main problem was the correlation tables...
- ⇛ We had around 80 of them...

	F_L	S_3	S_4	S_5	A_{FB}	S_7	S_8	S_9
F_L	1.00	0.06	0.00	0.03	0.04	−0.02	0.07	0.08
S_3		1.00	0.01	0.10	−0.00	−0.07	−0.01	−0.03
S_4			1.00	0.08	0.11	−0.00	0.07	0.02
S_5				1.00	0.05	−0.01	0.00	0.04
A_{FB}					1.00	0.03	−0.07	0.02
S_7						1.00	0.01	0.11
S_8							1.00	0.02
S_9								1.00

Correlation tables

⇛ The main problem was the correlation tables...

⇛ We had around 80 of them...

q^2 = M**2(<MU+ MU->)	0.1-0.98 GeV^2							
RE	P P --> B0 < K*(892) < K+ PI- > MU+ MU- > X							
SQRT(S)	7000.0 GeV							
SQRT(S)	8000.0 GeV							
CORR	F_L	S_3	S_4	S_5	A_{FB}	S_7	S_8	S_9
F_L	1.00	0.06	0.00	0.03	0.04	-0.02	0.07	0.08
S_3	0.06	1.00	0.01	0.10	0.00	-0.07	-0.01	-0.03
S_4	0.00	0.01	1.00	0.08	0.11	0.00	0.07	0.02
S_5	0.03	0.10	0.08	1.00	0.05	-0.01	0.00	0.04
A_{FB}	0.04	0.00	0.11	0.05	1.00	0.03	-0.07	0.02
S_7	-0.02	-0.07	0.00	-0.01	0.03	1.00	0.01	0.11
S_8	0.07	-0.01	0.07	0.00	-0.07	0.01	1.00	0.02
S_9	0.08	-0.03	0.02	0.04	0.02	0.11	0.02	1.00

HepData format

⇛ So HepData format is completely different then tex.

```
*dataset:
*location: Appendix C
*dscomment: Likelihood correlation matrix $0.1 < q^2 < 0.98~{\rm GeV}^2/c^4$.
*qual: $q^2$ = M**2(<MU+ MU->) IN GEV**2: 0.1 TO 0.98
*reackey: P P --> B0 + X
*obskey: CORR
*qual: RE : P P --> B0 < K*(892) < K+ PI- > MU+ MU- > X
*qual: SQRT(S) IN GEV : 7000.0
*qual: SQRT(S) IN GEV : 8000.0
*yheader: $F_{\rm L}$ : $S_3$ : $S_4$ : $S_5$ : $A_{\rm FB}$ : $S_7$ : $S_8$ : $S_9$
*xheader: CORR
*data: x : y : y : y : y : y : y : y : y
 $F_{\rm L}$; 1.00; 0.06; 0.00; 0.03; 0.04; -0.02; 0.07; 0.08;
 $S_3$; 0.06; 1.00; 0.01; 0.10; 0.00; -0.07; -0.01; -0.03;
 $S_4$; 0.00; 0.01; 1.00; 0.08; 0.11; 0.00; 0.07; 0.02;
 $S_5$; 0.03; 0.10; 0.08; 1.00; 0.05; -0.01; 0.00; 0.04;
 $A_{\rm FB}$; 0.04; 0.00; 0.11; 0.05; 1.00; 0.03; -0.07; 0.02;
 $S_7$; -0.02; -0.07; 0.00; -0.01; 0.03; 1.00; 0.01; 0.11;
 $S_8$; 0.07; -0.01; 0.07; 0.00; -0.07; 0.01; 1.00; 0.02;
 $S_9$; 0.08; -0.03; 0.02; 0.04; 0.02; 0.11; 0.02; 1.00;
*dataend:
```

My scripts

⇛ Written in python.

⇛ Will briefly go through the some of it's functions.

```
class Table:
    def __init__(self, header, columns, matrix):
        self.header = header
        self.columns = columns
        self.matrix = matrix
        self.matrix_fix = []
        self.table = ''

    def get(self, row, column):
        if row > column:
            return self.get(column, row)
        return self.matrix[row][column - row]

    def get_row(self, row):
        return self.matrix[row]

    def __str__(self):
        return self.__unicode__()

    def fixmatrix(self):
        print self.matrix
        self.matrix_fix = self.matrix
        for i in range(0, len(self.matrix)):
            print self.matrix[i]
            for j in range(0, len(self.matrix[i])):
                if (self.matrix[i][j] == ' ' or self.matrix[i][j] == '   ' or self.matrix[i][j] == '   ' or self.matrix[i][j] == '
                    self.matrix_fix[i][j] = get_ride_of_latex(self.matrix[j - 1][i + 1])
                    #print(i,j, self.matrix[j-1][i+1])
                else:
                    #print(i,j, get_ride_of_latex(self.matrix[i][j]))
                    self.matrix_fix[i][j] = get_ride_of_latex(self.matrix[i][j])
```

My scripts

⇛ Written in python.

⇛ Will briefly go through the some of it's functions.

```
def get_string(self):
    s = '*data:  x : '
    for i in range(1, len(self.matrix_fix[0]) - 1):
        s += "y :"
    s += " y "
    self.table += s + '\n'

    for i in range(0, len(self.matrix_fix)):
        s = ''
        s += self.columns[i + 1] + " : "
        for j in range(1, len(self.matrix_fix[i])):
            #print('a',self.matrix_fix[j-1][i+1])
            s += get_ride_of_latex(self.matrix_fix[j - 1][i + 1]) + ' : '
        self.table += s + '\n'
        # self.table+= \

    print("TEST: ", self.matrix_fix)
def __unicode__(self):
    dupa=":".join(self.columns)
    dupa=dupa.replace(': ', '', 1)
    #print(dupa)
```

My scripts

⇛ Written in python.

⇛ Will briefly go through the some of it's functions.

```
        print("TEST: ", self.matrix_fix)
    def __unicode__(self):
        dupa=":".join(self.columns)
        dupa=dupa.replace(': ', '', 1)
        #print(dupa)


        return """*dataset:
*location: Appendix G
*dscomment: %s
*yheader: %s

*data CHANGEME
%s
*dataend:
""" % (self.header, dupa, self.table)


class TableBuilder:
    def __init__(self):
        self.header = None
        self.columns = None
        self.matrix = []
        self.matrix_fix = []

    def add_row(self, row):
        self.matrix.append(row)

    def build(self):
        return Table(self.header, self.columns, self.matrix)

    def parse_table_header(self, line):
```

My scripts

- ⇛ Written in python.
- ⇛ Will briefly go through the some of it's functions.

```
def is_hline(self, line):
    return line.startswith(r'\hline')

def is_table_header(self, line):
    return line.startswith(r'\subsection')

def is_table_begin(self, line):
    return line.startswith(r'\begin{tabular}')

def is_table_end(self, line):
    return line.startswith(r'\end{tabular}')

def build(self):
    self.state = ParserStateEnum.DONE
    self.table = self.builder.build()
```

My scripts

- ⇛ Written in python.
- ⇛ Will briefly go through the some of it's functions.

```
*dataset:
*location: Appendix G
*dscomment: None
*yheader:   $A_{3}$ : $A_{4}$ : $A_{5}$ : $A_{6s}$ : $A_{7}$ : $A_{8}$ : $A_{9}$

*data CHANGEME
*data:  x : y :y :y :y :y :y : y
  $A_{3}$  :   1.00    :    -0.12    :    -0.18    :    0.00    :    0.01    :    0.01    :    -0.05  :
 $A_{4}$  :    -0.12    :    1.00    :    0.26    :    -0.14    :    0.02    :    -0.08    :    0.03  :
 $A_{5}$  :    -0.18    :    0.26    :   1.00    :    -0.13    :    -0.09    :    0.02    :    0.07  :
 $A_{6s}$  :    0.00    :    -0.14    :    -0.13    :    1.00    :    0.0    :    0.01    :    -0.01  :
 $A_{7}$  :    0.01    :    0.02    :    -0.09    :    0.0    :    1.00    :    0.14    :    -0.15  :
 $A_{8}$  :    0.01    :    -0.08    :    0.02    :    0.01    :    0.14    :    1.00    :    -0.07  :
 $A_{9}$ :    -0.05   :    0.03   :    0.07   :    -0.01   :    -0.15   :    -0.07   :   1.00   :

*dataend:
```

User case

⇛ There will be things that need to be changed for each table:

```
def get_ride_of_latex(line):
    line2 = line
    line2 = line2.replace(r"\\rm", r"\rm")
    line2 = line2.replace(r"\\", "")
    line2 = line2.replace(r'$', '')
    line2 = line2.replace(r'\ ', '')
    line2 = line2.replace(r'\ ', '')
    #line2 = line2.replace(r'\gevgevcccc', 'GeV/c^4')
    return line2
```

Error encoding

⇛ If you need to encode errors in HepData format:

```
*yheader: $F_{\rm L}$ : $S_{3}$ : $S_{4}$ : $S_{5}$ : $A_{\rm FB}$ : $S_{7}$ : $S_{8}$ : $S_{9}$
*data: x : y : y : y : y : y : y : y : y
0.10 TO 0.98 ;    0.263 +0.045,-0.044(DSYS=0.017) ;       -0.036 +0.063,-0.063(DSYS=0.005) ;
+0.058,-0.057(DSYS=0.009) ;       0.015 +0.059,-0.059(DSYS=0.006) ;       0.079 +0.076,-0.075(DSYS
1.1 TO 2.5;       0.660 +0.083,-0.077(DSYS=0.022) ;       -0.077 +0.087,-0.105(DSYS=0.005) ;
+0.068,-0.080(DSYS=0.012) ;       -0.219 +0.094,-0.104(DSYS=0.004) ;      -0.098 +0.108,-0.123(DSY
2.5 TO 4.0  ;     0.876 +0.109,-0.097(DSYS=0.017)  ;      0.035 +0.098,-0.089(DSYS=0.007)  ;
+0.082,-0.090(DSYS=0.007)  ;     0.068 +0.120,-0.112(DSYS=0.005)  ;      0.030 +0.129,-0.131(DSYS=
4.0 TO 6.0  ;     0.611 +0.052,-0.053(DSYS=0.017) ;       0.035 +0.069,-0.068(DSYS=0.007) ;
+0.051,-0.052(DSYS=0.004) ;       -0.016 +0.081,-0.080(DSYS=0.004) ;      0.167 +0.094,-0.091(DSYS
6.0 TO 8.0 ;      0.579 +0.046,-0.046(DSYS=0.015) ;       -0.042 +0.058,-0.059(DSYS=0.011) ;
```

Submitting procedure

⇛ Albert and Marco have put in a procedure for submitting your results to HepData:

- You contact Alex Grecu that he prepares you a temporary slot on HepData. You will get from him number and password that you can use for logging.
- He will also prepare a JIRA task for this data submission.
- You code in your result (please remember to always have your own copy as data can be lost in HepData portal).
- Once you finish coding, your results will be reviewed/sign off by the analysis e-group.
- RD convenors are also in the loop.
- After you collected enough pokemons (:P) Alex submits this to HepData.

Summary

⇛ HepData is a tricky format that unfortunately is not similar to other ones :(

⇛ I am afraid that everyone has to adjust those scripts for they tables.

⇛ If you want to put the results to HepData do it with the paper submission!

⇛ If you already produced some results and want to copy them from tex files to Hepdata you can start with my scripts:
`http://www.physik.uzh.ch/~mchrzasz/HepData/KstarMuMu/`

⇛ Or on git:
`https://git.physik.uzh.ch/gitbucket/mchrzasz/HepData`

Backup