

“Physics of the B-Factories”: \LaTeX templates and style guide

Bruce Yabsley

PBF Book Gen. Eds / Belle / University of Sydney High Energy Physics group

“Physics of the B-Factories”,
3rd Workshop, Mainz 2nd October 2010



Outline

- 1 Previous meeting ...
- 2 Standalone template
- 3 Full template
- 4 Bibliography and `bibtex` issues
- 5 Macros and symbols
- 6 Substantial style issues



At the previous meeting: KEK, May 2010




0 1 asp^{ns} TAVP natives eval comb misc

The style guide: concrete advice on writing the text

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“Physics of the B-Factories”,
2nd Workshop, KEK 17th May 2010



Bruce YabsleyStyle guide

At the previous meeting: KEK, May 2010

0 1 asp^{ns} TAVP natives eval comb misc

Outline

Our aspirations

Tense, aspect, voice, and persona

Tense (and aspect)

Voice, and persona

Native speakers versus the rest

Evaluative speech

Combined or separate presentation of results?

Miscellaneous things



Bruce Yabsley

Style guide



From July: The standalone template

- compiles in a single directory
- chapter & section \label's can be cross-referenced
- intended for contributors who are less computer-aware
are too busy
etc.
- doubles as a style guide, with concrete examples:
 - citations
 - tables & figures
 - labels
- many have been using this
- this content should now be transferred to ...

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15.1 Conventional charmonium

Editors:

Riccardo Faccini (BABAR)
Pasha Pakhlov (Belle)
Nora Brambilla (theory)

The headings above were produced with the commands
`\pbfsbshowsection{Riccardo Faccini}`
and
`\pbfsbshoweditors{Pasha Pakhlov}`

respectively for the BABAR, Belle, and theory editors of the section. They should be replaced with the label and editors' names of your own section/unit. (A command `\pbfsbshowchapter` also exists.) Eventually these will set chapter and section counters to ensure proper labelling of subsections and so on, but currently they do not do so.

This template

This is the template for standalone writing and compilation of contributions to the book “Physics of the B -factories”. It should allow contributors to sit down and start writing content for the book, and produce output close to the final look-and-feel without worrying about the full version of the book on SVN. The following files are included:

```
phf-standalone.tex    LATEX source of this file
phf-standalone-section-list.tex
                        sectional units of the book
phf-syn.tex           official symbols file
multibib.sty          necessary external package
phf-sviewer.cls       class file, adapted from EPJC
phf-svepj.cls         class options file for the above
phf-titles.sty        title reference package
phf-bib-bfactory.bst  BibTeX style file
phf-bib-other.bst     BibTeX style file
phf-bib-babar.bib     bibliography file: BABAR papers
phf-bib-belle.bib     bibliography file: Belle papers
phf-bib-other.bib     bibliography file: other papers
examples/             directory with example figures
phf-make              compilation commands
```

where the latter includes just

```
pdflatex phf-standalone
bibtex phf-standalone
bibtex BaBar
bibtex Belle
pdflatex phf-standalone
pdflatex phf-standalone
```



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which should be sufficient to compile PDF output from the source, resolving all references, except for cases where certain errors have corrupted L^AT_EX files on a previous run. If this occurs, try

```
rm pbf-standalone.aux
./pbf-make
```

For contributors' convenience this template includes rules and examples on the following subjects:

- Citations
- Bibliographies
- Tables
- Figures
- Notational changes
- Sectioning, labels, and cross-references

Citations

The basic citation of a Belle paper, given by the command `\citeBelle{Senter:2005tr}` and so on, looks like this: physics studies include charm fragmentation (Senter, 2006) and *B*-meson branchings to final states including charmed-strange mesons (Joshi, 2010). Note that the “et al” is suppressed in the citation, and the label in the bibliography, to avoid tedium; of course it appears in the bibliography in the authorlist itself. If the authorname needs to be incorporated into the grammar of the sentence, then the alternative form `\citeBelle{Sahu:1996ag}` is available: important technical measurements were made by Sahu (1996).

Citations of *BABAR* papers proceed in exactly the same way, with a default form `\citeBabar{Aubert:2002mm}`: physics studies include searches for violation of discrete symmetries (Aubert, 2002), and measurements of charmonium form factors (Lees, 2010); using the alternative form `\citeBabar{Brose:1996hg}`, we can note that calorimeter design studies and beam test results were presented by Brose (1996).

Other `natbib`-style commands, with `BaBar` and `Belle` appended as appropriate, should also work, but should also not be necessary.

The majority of *BABAR* papers will have the same author field, so papers from the same year need to be distinguished: the papers (Aubert, 2001a) and (Aubert, 2001b) are not the same. (The same thing will happen for early Belle papers, and a few ones in later years.) Citing such papers together has suboptimal effects in the main text: (Aubert, 2001a,b). Note that the distinguishing letter will not be stable between standalone and full compilations of the book, or between re-edited versions of the book in general.

Papers by other authors, especially theoreticians, will clearly need to be cited. For example, someone will surely wish to cite Bigi and Sanda (2000).

Bibliographies

There are three bibliographies at the end of the document: one each for *BABAR*, Belle, and other papers. Each uses a

customized format where a label resembling the standard citation is set off from the bibliographic entry, to make the (long!) list of papers easier to search. So, the theory work previously mentioned (Bigi and Sanda, 2000) has a label “Bigi and Sanda 2000,” followed by a newline, in the bibliography.

Each bibliography is constructed from its own file, included in this distribution: `pbf-bib-babar.bib`, `pbf-bib-belle.bib`, and `pbf-bib-other.bib`. Each has been constructed from SPIRES output in `bibTeX` format. The *BABAR* and Belle files should be reasonably complete, but will of course need to be updated over time: contributors should make updates at need. (If the instructions in the header are followed, there should be no ambiguity about names.) The “other” papers bibliography is almost empty at present; in the full version on SVN it will evolve rapidly, with almost every contribution; for this standalone code, only occasional updates will be made.

Note that the title of the other-papers bibliography is not coming out as requested, due to some `multibib` feature: this will be fixed in a future update. Other known problems or omissions, to be fixed in future releases, include

- detail of citation of `arXiv`-only papers;
- details of the display of added notes in `.bib` files, which may be necessary for some references;
- construction of an index;
- active references → URLs in the bibliography (and active links within the document itself).

Tables

Tables are an excellent way of summarizing large amounts of information, and we assume that most tables in the book will be dedicated summaries prepared for the purpose (comparable to Table 1), rather than being lifted from individual publications. There will of course be exceptions, perhaps where a whole class of measurement is represented by only one paper (such as in Table 2 below).

EPJ C prefers an open style of table without vertical rules, and sparing use of horizontal rules. Other general notes:

- Captions should be placed above a table, but below a figure. Our rationalization of this common rule is that a table of numbers in general requires introduction, whereas a picture largely “speaks for itself”.
- The array environment should be used to construct the table itself when the typical entry will be set in math mode, as in Table 1 (this will be the most common case); normal text mode for headings etc. can be recovered by use of `\text{Heading}`. Other cases should be set using `tabular`. Table 2, where only one column relies on math mode, has been prepared using `tabular`.
- Explicit + signs should be included for intrinsically signed quantities.
- Reduced-size text may be acceptable on a by-case basis to make a table more compact, but legibility



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Table 1. Example of a table summarizing quantities from more than one paper; adapted from Vasseur (2008). Measurements of CP parameters, branching fractions, and fractions of longitudinal polarization in the $B \rightarrow \rho\rho$ modes.

	Belle	Belle	Average
$S_{\rho^0\rho^0}$	$-0.17 \pm 0.20 \pm 0.06$	$+0.19 \pm 0.30 \pm 0.08$	-0.05 ± 0.17
$C_{\rho^0\rho^0}$	$+0.01 \pm 0.15 \pm 0.06$	$-0.16 \pm 0.21 \pm 0.08$	-0.06 ± 0.13
$A_{\rho^0\rho^0}$	$-0.12 \pm 0.13 \pm 0.10$	$+0.00 \pm 0.22 \pm 0.03$	-0.06 ± 0.13
$C_{\rho^0\rho^+}$	$+0.4 \pm 0.9 \pm 0.2$	---	$+0.4 \pm 0.9$
$S_{\rho^0\rho^+}$	$+0.3 \pm 0.9 \pm 0.2$	---	$+0.5 \pm 0.9$
$B_{\rho^0\rho^0} [10^{-4}]$	$25 \pm 2 \pm 4$	$23 \pm 4 \pm 3$	24 ± 3
$B_{\rho^0\rho^+} [10^{-4}]$	$17 \pm 2 \pm 2$	$22 \pm 7 \pm 5$	18 ± 3
$F_{\rho^0\rho^0}^L [10^{-4}]$	$0.8 \pm 0.3 \pm 0.2$	$0.4 \pm 0.4 \pm 0.2$	0.7 ± 0.3
$F_{\rho^0\rho^+}^L$	$0.90 \pm 0.02 \pm 0.02$	$0.94 \pm 0.04 \pm 0.03$	0.96 ± 0.02
$f_{\rho^0\rho^0}^L$	$0.90 \pm 0.04 \pm 0.03$	$0.95 \pm 0.11 \pm 0.02$	0.91 ± 0.04
$f_{\rho^0\rho^+}^L$	$0.70 \pm 0.14 \pm 0.05$	---	0.70 ± 0.15

should be ensured: Table 1 is an example at the limit of reasonable use.

- Tables spanning two columns can be implemented using the `tablex` environment. They should be used sparingly, but in some cases cannot be avoided: Table 2 is an example.
- Extra vertical space throughout a table can be added by using `e.g. \renewcommand{\arraystretch}{1.4}` inside the floating table environment, just before the array or tabular itself. In general this is necessary where super- and sub-scripted quantities are used in the body of the table, to avoid a cramped appearance. Where an `\hline` follows a line with significant sub-scripting, additional space following that line only, `\ea (say) \[0.5ex]` command, may be necessary.
- Horizontal space between columns may need to be explicitly added in some cases to ensure legibility: use of (say) `\@{\hspace{1.0ex}}` in the column argument of the array or tabular environment is appropriate (see Table 1 for an example).
- The array package is included by default, allowing extended control of the table format within the columns argument: Tables 3 and 4 show a simple example.

Tables running over more than one page are not supported at present, but support is foreseen in a future update. (The blockage is that the standard `longtable` package is not compatible with two-column documents. At least one workaround for this exists: the `rvrtex2` class patches the `longtable` commands to make them work in its two-column format. This or some other technique may be imported.) On occasion, landscape tables and figures may be required: this is currently supported via the `sidewaystable` and `sidewaysfigure` environments from the package `rotating`. Tables 3 and 4 are examples.

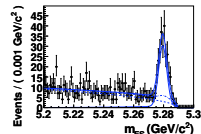


Fig. 1. Example of a .pdf plot constructed from an .eps original, with (1) the original notation M_{ES} changed to m_{ES} manually in the .eps file, and (2) the final version produced using `epstopdf` at the prompt on a Linux box. From Li (2008): m_{ES} distributions from $B^0 \rightarrow K_S^0 \pi^+ \pi^- \gamma$ decays. Points with error bars are data. The curves show the results from the γ -dependent m_{ES} fit. The dashed and dash-dotted curves are the γ and all BG. The thin curve is the total signal including SCF and the thick curve is the total PDF.

Figures

To keep the length of the book within reasonable limits, we will need to be selective in the inclusion of figures; on the other hand, well-chosen and produced figures are irreplaceable as a way of summarizing data and giving intuitive access to it. We will evolve some practical rules-of-thumb as we write the book, but for now we note that it will not in general be possible to include figures for every measurement, let alone a *RAAAR* figure and a Belle figure for every measurement: we will have to be selective, choosing a mix of

- figures showing representative or “typical” cases,
- figures showing important exceptions or “special cases”, and
- summary figures prepared especially for this book.

Currently acceptable formats for figures are .pdf, .jpg, and .png files: examples are shown below (Figs 1–4). As `pdflatex` is used to produce the output, .eps files may not be used, however methods to convert .eps to .pdf files are readily available and usually straightforward: examples are shown in Figs 1 and 4. In all cases where conventions have been made, the original file should also be uploaded to the PDF site.

Figures spanning both columns can be prepared using the `figure*` environment: Fig. 4 is an example. Note also the use of the `subfigure` package for ordering and captioning of individual plots.

Notational changes

The official PDF notation should be `math` without the text:



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Table 2. Example of a table spanning two columns, produced using the `table*` environment. Note also the use of the `declam` package in column 2, to give alignment on a comma; other extended functionality is available using the `array` package. The table is adapted from Go (2007): Time-dependent asymmetry in Δt bins, corrected for experimental effects, with statistical and systematic uncertainties. Contributions from event selection, background subtraction, wrong tag correction, and deconvolution are also shown.

Δt bin	window [ps]	A and total error	Statistical error	Systematic errors				
				total	event sel.	bgld sub.	wrong tags	deconvolution
1	(0.0, 0.5)	$+1.013 \pm 0.028$	0.0320	0.019	0.006	0.006	0.010	0.014
2	(0.5, 1.0)	$+0.916 \pm 0.022$	0.015	0.016	0.006	0.007	0.010	0.009
3	(1.0, 2.0)	$+0.699 \pm 0.038$	0.029	0.024	0.013	0.005	0.009	0.017
4	(2.0, 3.0)	$+0.339 \pm 0.056$	0.047	0.031	0.008	0.005	0.007	0.029
5	(3.0, 4.0)	-0.136 ± 0.075	0.060	0.045	0.009	0.009	0.007	0.042
6	(4.0, 5.0)	-0.634 ± 0.084	0.062	0.057	0.021	0.014	0.013	0.049
7	(5.0, 6.0)	-0.961 ± 0.077	0.060	0.048	0.020	0.017	0.012	0.038
8	(6.0, 7.0)	-0.974 ± 0.080	0.060	0.053	0.034	0.025	0.020	0.025
9	(7.0, 9.0)	-0.675 ± 0.109	0.092	0.058	0.041	0.027	0.022	0.022
10	(9.0, 13.0)	$+0.089 \pm 0.193$	0.161	0.107	0.067	0.063	0.038	0.039
11	(13.0, 20.0)	$+0.243 \pm 0.435$	0.240	0.363	0.145	0.226	0.080	0.231

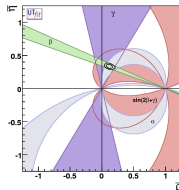


Fig. 2. Example of a .jpg figure from UTfit (Bona et al., 2010) current in June 2010: Allowed regions for (ϕ_1, ϕ_2, ϕ_3) given by the measurements of $\sin 2\phi_1$, $\cos 2\phi_1$, ϕ_1 from $D^0 \pi^+ \pi^-$, ϕ_2 , ϕ_3 , and $2\phi_1 + \phi_2$. (In the figure the alternative notation $(\beta, \alpha, \gamma) = (\phi_1, \phi_2, \phi_3)$ is used.) The closed contours at 68% and 95% probability are shown. The full lines correspond to 95% probability regions for each constraint.

- (ϕ_1, ϕ_2, ϕ_3) for the angles of the unitarity triangle;
- (S, C) for the coefficients of time-dependent CP violation;
- m_{B_s} for the “mass” variable inherited from earlier B -meson experiments;

and so on. This also applies to tables and figures, including plots and other graphical information within figures. In older (or relatively simply-constructed) .eps files, it will

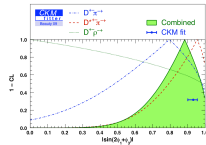


Fig. 3. Example of a .png figure, converted for this purpose from the original .eps file from CKMfitter (Charles et al., 2005): Constraints on $|\sin(2\phi_1 + \phi_2)|$ from the measurement of time-dependent CP asymmetries in $D^0 \pi^+ \pi^-$; Summer 08 HFAG average including a preliminary Belle ICHEP08 update for $D^0 \pi^+$ is used as input. The extraction of the UT-angle combination relies on $SU(3)$ symmetry for the estimates of the suppressed-to-leading amplitude ratios . . . (see further specifics ad loc: not relevant for this example).

often be possible to edit notation by hand (e.g. Fig. 1), and/or using `psedit`/`xfig` or other simple programs. Plots produced under proprietary software (e.g. Adobe Illustrator) may need to be edited from source with those same programs, or otherwise remade from scratch. If the original has been produced by an outside group, such as Fig. 2, special effort may be required. The original notation has been retained; for the final version of the book we would make every effort to obtain a LaTeX version with the notation converted to our standard.

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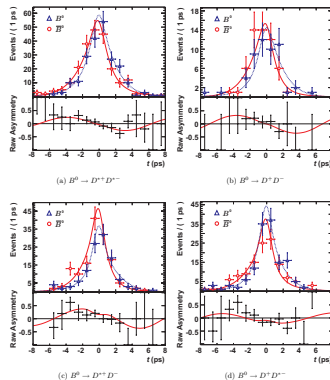


Fig. 4. Example of a figure spanning both columns, produced with the `figures` environment. PDF plots are used, converted from the original `.eps` files using `Preview` on a Mac in this case; arrangement of the individual plots within the figure is handled by the `tabular` environment, with the captions for the plots produced using `subfigs`. From Aubert (2009): Projections onto Δt of the fit results and the data in the region $m_{B^0} > 5.27 \text{ GeV}/c^2$ for the three highest proper tagging categories. The triangular points and the dashed lines are for B^0 tagged events, and the circular points and solid lines are for B^- tagged events.

The file `pbf-syn.tex`, included in this release, includes macros for many standard particle names, symbols, and so on; these should be used where possible. This file will be updated over time.

Sectioning, labels, and cross-references

In this standalone template, the other chapters and sections of the book are present in virtual form: see the table of contents at the beginning of the output file. Labels

for all of these sectional units have been defined, and are shown in Tables 3 and 4; these will not change. Stable cross-references to other parts of the book can therefore be made: for example, to Chapter 4 on “Vertexing” (within Part B, “Tools and methods”). If desired, the official sectional unit name can be accessed via a special command: `\pbfref{VTX}` and so on.

The principal labels have been chosen for a compromise between descriptiveness, compactness and consistency. The typical case is a single word or contraction, but in some cases hyphenation has been used. Alternative

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Table 3. List of the major sectional units of the book, their names, principal labels, and alternative labels (the list is continued in Table 4). The labels are not expected to change in the life of the book, and so can be used now to refer to other sections and chapters. Names of sectional units are also accessible using the `\partref` command; for example, `\partref{VTI}` gives “Verifying” in the output. When preparing labels for tables, figures, and equations, the principal label of the sectional unit should be used in the stem of the label: `\table{TABLE:VTI:EXAMPLE}`, `\fig{FIG:VTI:EXAMPLE}`, and so on. Implementation notes: this table and Table 4 have been constructed using the `tabularx` environment to obtain a maximum width spanning the full page, as opposed to the `tblr` column of the text). The `tabularx` bar in the label column is obtained by successively commands in the column field of the external file `units of the array package`.

Unit	Name	Label	Alternative labels
Part	The facilities	FACILITIES	--
Chapter	The B -factors	BFAC	FACILITIES-BFACT
Chapter	The detectors and collaborations	DETECTORS	FACILITIES-DETECTORS
Chapter	Data taking and Monte Carlo production summary	HCPROD	FACILITIES-HCPROD, DATA, FACILITIES-0-ITA, DATA-HCPROD, HCPROD-DATA
Part	Tools and methods	TOOLS	--
Chapter	Verifying	VTI	TOOLS-VTI
Chapter	Multivariate discriminants	MTA	TOOLS-MTA
Section	Particle identification	OPT	MTA-OPT, TOOLS-MTA-OPT, TOOLS-OPT
Section	Flavor tagging	FTAG	MTA-FTAG, TOOLS-MTA-FTAG, TOOLS-FTAG
Section	Background discrimination	BGD	MTA-BGD, TOOLS-MTA-BGD, TOOLS-BGD
Chapter	B -meson reconstruction	BMCON	TOOLS-MTA-BMCON, TOOLS-BMCON, TOOLS-BACKGROUND
Chapter	Mixing and time-dependent analyses	TMDP	TOOLS-MTA-TMDP, TOOLS-TMDP, TOOLS-TIME-DEPENDENT
Chapter	Maximum likelihood fitting	HL	TOOLS-HL
Chapter	Angular analysis	ANGULAR	TOOLS-ANGULAR
Chapter	Dilute analysis	DALITZ	TOOLS-DALITZ
Chapter	Blind analysis	BLIND	TOOLS-BLIND
Chapter	Systematic error estimation	STRT	SYSTEMATICS, TOOLS-STRT, TOOLS-SYSTEMATICS
Chapter	The results and their interpretation	RESULTS	--
Chapter	The CKM matrix and the Kobayashi-Maskawa mechanism	CKM	UT, MT



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Table 4. List of the major sectional units of the book, their names, and their labels, continued from Table 3.

[illegible]

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labels have also been defined, anticipating cases that some contributors may find more intuitive, systematic, and so on.

Labels for tables, figures, and equations should be constructed in the following tripartite form:

<TYPE>:<SECLABEL>:<NAME>

where

<TYPE> is one of TAB, FIG, EQ;
<SECLABEL> is the principal label of the sectional unit, taken from Tables 3 and 4; and
<NAME> is a name chosen by the contributor, which must of course be unique within that sectional unit for that kind of object.

Acceptable examples thus include

```
- for tables:
TAB:BRECON:MODES-BABAR
TAB:VBS:SUMMARY
TAB:YSS:BRANCHINGS
- for figures:
FIG:PID:CERENKOV
FIG:PHI1:JPS1-KS-BELLE
FIG:XY2:Y4260-BABAR-DISCOVERY
- for equations:
EQ:DALITZ:BLATT-WEISSKOPF
EQ:CPT:SM-EXTENSION
EQ:TAU:SECON-CLASS
```

Labels for (sub)sections defined by contributors — at a logical level *below* (i.e. within) those listed in Tables 3 and 4 — should be constructed in the bipartite form

<SECLABEL>:<SUBNAME>

with some arbitrary examples being

```
MCPROD:RUNPERIODS-BELLE
ANGULAR:TRANSVERSITY
MIXING:EPR
QED:R
```

Bibliography: BaBar Publications

Aubert 2001a:

B. Aubert et al. "Measurement of J/ψ production in continuum e^+e^- annihilations near $\sqrt{s} = 10.6$ GeV". *Phys. Rev. Lett.* **87**, 162002 (2001). doi:10.1103/PhysRevLett.87.162002. hep-ex/0106044.

Aubert 2001b:

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NEW: Templates for sections & the full book (1)

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%
%% pbf-phi1.tex : phi_1 (or beta) section source
%% ----- (include file) for PBF book
%%
%% Comments:   The title and labels should not be altered without first
%%              discussing the matter with the general editors.
%%
%%              This section lies within Part C, "The results and their
%%              interpretation", in the chapter on "B-physics".
%%
%% 2010/09/26 template written (B.D.Yabsley on behalf of the general editors)
%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\section{\phone, or $\beta$}
\label{PHI1}
\label{BETA}
\label{B-PHI1}
\label{B-BETA}
\label{B-CKM-PHI1}
\label{B-CKM-BETA}

\pbfshoweditors {Owen Long}           % BaBar editor(s)
                  {Yoshihide Sakai}   % Belle editor(s)
                  {Ikaros Bigi}       % theory editor(s)

%
%% PBF: USER TEXT TO BE INCLUDED BELOW THIS POINT
%

Text here.

%
%% PBF: END OF FILE
%
```



NEW: Templates for sections & the full book (2)

- you will do almost all of your writing in your respective file
- title taken from the principal `\label` of the section: here PHI1
- it sits in its own directory (here `Phi1_or_Beta/`)
along with figures or other files as needed
- this is all kept under SVN: see Adrian's talk
- to compile the text:
 - `./pbf-make-section Phi1_or_Beta` to build this section:
other chapters & sections virtually present as with standalone package
 - `./pbf-make` to build the entire book
- this works on Macs and linux boxes; \exists known Windows issues



NEW: Templates ... (3): section output

1

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- 2 The detectors and collaborations 1
- 3 Datataking and Monte Carlo production summary 1

B Tools and methods

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- 5 Multivariate discriminants 1
 - 5.1 Analysis optimization 1
 - 5.2 Particle identification 1
 - 5.3 Flavor tagging 1
 - 5.4 Background discrimination 1
- 6 B -meson reconstruction 1
- 7 Mixing and time-dependent analyses 1
- 8 Maximum likelihood fitting 1
- 9 Angular analysis 1
- 10 Dalitz analysis 1
- 11 Blind analysis 1
- 12 Systematic error estimation 1

C The results and their interpretation

- 13 The CKM matrix and the Kobayashi-Maskawa mechanism 1
- 14 B -physics 1

14.6 ϕ_1 , or β

Editors:

Owen Long (BABAR)
Yoshihide Sakai (Belle)
Ikaros Bigi (theory)

Text here.

Bibliography: BaBar Publications

Bibliography: Belle Publications

Bibliography



NEW: Templates ... (4): full book output

Contents

A The facilities

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- 2 The detectors and collaborations 1
- 3 Datataking and Monte Carlo production summary 1

B Tools and methods

- 4 Vertexing 1
- 5 Multivariate discriminants 1
 - 5.1 Analysis optimization 2
 - 5.2 Particle identification 2
 - 5.3 Flavor tagging 2
 - 5.4 Background discrimination 2
- 6 B -meson reconstruction 2
- 7 Mixing and time-dependent analyses 2
- 8 Maximum likelihood fitting 2
- 9 Angular analysis 2
- 10 Dalitz analysis 2
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- 12 Systematic error estimation 2

C The results and their interpretation

- 13 The CKM matrix and the Kobayashi-Maskawa mechanism 3
- 14 B -physics 3
 - 14.1 V_{ub} and V_{cb} 3
 - 14.2 V_{us} and V_{cs} 3

Part A

The facilities

Chapter 1

The B -factories

Editors:

Jonathan Dorfan (BABAR)

Hirofumi Sugawara (Belle)

Text here.

Chapter 2

The detectors and collaborations

Editors:

Nicolas Arnaud and William Wisniewski (BABAR)

Hiroaki Aihara (Belle)

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Part C

The results and their interpretation

Chapter 13

The CKM matrix and the Kobayashi-Maskawa mechanism

Editors:

Adrian Bevan and Soeren Prell (BABAR)

Boštjan Golob and Bruce Yabsley (Belle)

Thomas Mannel (theory)

Text here.

Chapter 14

B -physics

Text here.

14.4 Charmless B decays

Editors:

Fergus Wilson (BABAR)

Martin Beneke (theory)

Text here.

14.5 Mixing, and EPR correlations

Editors:

Soeren Prell (BABAR)

Bruce Yabsley (Belle)

Text here.

14.6 ϕ_1 , or β

Editors:

Owen Long (BABAR)

Yoshihide Sakai (Belle)

Ikaros Bigi (theory)

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NEW: Templates ... (4): full book output

Hisaki Hayashii (Belle)
Antonio Pich (theory)

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Chapter 18 QED and initial state radiation studies

Editors:
Fabio Anulli (BABAR)
Galina Pakhlova (Belle)

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Chapter 19 Two-photon physics

Editors:
Sadaharu Uehara (Belle)

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Chapter 20 $\Upsilon(5S)$ physics

Chapter 22 Global interpretation

22.1 Global CKM fits

Editors:
Gerald Eigen (BABAR)
Ryosuke Itoh (Belle)
Marcella Bona and Cecilia Tarantino (theory)

Text here.

22.2 Benchmark “new physics” models

Editors:
Emi Kou (theory)

Text here.

Bibliography: BaBar Publications

Bibliography: Belle Publications



Bibliography and bibtex issues

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  note01 = "%%",
  note02 = "%% bibliography of BaBar papers for the PBF book",
  note03 = "%%",
  note04 = "%% B.Yabsley for the general editors of ``Physics of the B-Factories''",
  note05 = "%%",
  note06 = "%% Comments: Entries produced by 'BibTeX' option in SPIRES, searching",
  note07 = "%% 'FIND CN BABAR AND (J PHYS.REV. OR J PHYS.REV.LETT. OR",
  note08 = "%% J NUCL.INST.METH.)'",
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  note26 = "%% More substantial changes should be agreed with editors.",
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  note28 = "%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%"
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Bibliography and bibtex issues

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  journal  = "Phys. Rev.",  
  volume   = "D78",  
  year     = "2008",  
  pages    = "071101",  
  eprint   = "0808.1838",  
  archivePrefix = "arXiv",  
  primaryClass = "hep-ex",  
  doi      = "10.1103/PhysRevD.78.071101",  
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  collaboration = "BABAR",  
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  journal  = "Phys. Rev.",  
  volume   = "D79",  
  year     = "2009",  
  pages    = "032002",  
  eprint   = "0808.1866",  
  archivePrefix = "arXiv",
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Macros and symbols

- ① we use a standard `pbf-sym.sty`, mostly inherited from BaBar
 - substantial mods due to Fergus still need to be merged in
 - if you need to introduce “standard” symbols of your own, add them to this file in a documented way:
 - add a date-stamped note to the header
 - mark off your additions clearly within the file
 - remark the change to the Hypernews
 - we will periodically consolidate/edit the results
- ② use `\pbfshoweditors` for yourselves;
behaviour may evolve, but usage should remain \approx the same
- ③ no macro yet for including contributors: we will provide one;
you are responsible for keeping track of them



Substantial style issues

- for now, consult previous presentations & `pbf-standalone.pdf`: all are linked on the web
- figures are going to be an issue
- further style rulings *will be made*, but we will do so based on draft content, not *a priori* ideas
- requests?

