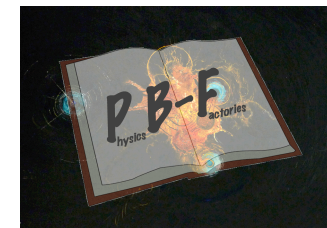


# Workshop Summary

2<sup>nd</sup> Workshop on the Physics of the B-Factories

17/18<sup>th</sup> May 2010

KEK



- 
- A lot of useful discussion has taken place over the last two days.
    - Good to see collaboration is strengthening between BaBar and Belle.
    - Need to incorporate theory section editors in these discussions. See:  
<http://www.slac.stanford.edu/xorg/BFLB/organization.html>
  - Hypernews fora have been requested for all sections:  
**Please use these for communication!**

<http://hypernews.slac.stanford.edu/HyperNews/BFLB/cindex>

# Sectioning

---

## ■ At the start of the meeting

### The facilities 1

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

Even though we discussed the sectioning at length over the last 6 months ...

### Tools and methods 1

- 4 Vertexing . . . . . 1
- 5 Multivariate discriminants . . . . . 1
  - 5.1 Particle identification . . . . . 1
  - 5.2 Flavor tagging . . . . . 1
  - 5.3 Background discrimination . . . . . 1
  - 5.4 Analysis optimization . . . . . 1
- 6 *B*-meson reconstruction . . . . . 1
- 7 Time-dependent analyses . . . . . 1
- 8 Maximum likelihood fitting . . . . . 1
- 9 Dalitz analysis . . . . . 1
- 10 Angular analysis . . . . . 1
- 11 Blind analysis . . . . . 1

There have been a number of suggested modifications at this meeting.

We have taken on board a number of modifications to the ordering, and hope that any further perturbation is small now that we are ready to start writing individual sections.

### The results and their interpretation 1

...

# Style

---

- Bruce introduced guidelines for style.
- Writing of the book should be driven by physics/technical content that everyone should feel able to contribute to based on their own levels of expertise.
  - e.g. the people who did the analysis/developed the techniques are important here!
  - e.g. Grad students can help by proof reading and giving us feedback: are the initial drafts understandable etc.?
- Perfecting the wording is going to be an iterative process between now and mid-2012.
  - Here the effort will mostly come from collaborators with a good grasp of the language.

# Style

- There is a symbols file: **use it!**
- There will be 3 bib files: keep them up to date.
  - bibtex will sort out duplicates, reference ordering etc.
- Bruce has updated his talk – please refer back to it!

LAF

From October: Default look-and-feel

Eur. Phys. J. C (2009) 59: 117–172  
DOI 10.1140/epjc/s10052-008-0807-z

THE EUROPEAN  
PHYSICAL JOURNAL C

Review

**Cosmic microwave background and first molecules in the early universe**

Monique Signore<sup>1,a</sup>, Denis Puy<sup>2,b</sup>

<sup>1</sup>Observatoire de Paris, LERMA, 75014 Paris, France  
<sup>2</sup>University of Montpellier II, CNRS UMR 5024, GRAAL CC72, 34000 Montpellier, France

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**Abstract** Besides the Hubble expansion of the universe, the main evidence in favor of the big-bang theory was the discovery, by Penzias and Wilson, of the cosmic microwave background (hereafter CMB) radiation. In 1990, the COBE satellite (Cosmic Background Explorer) revealed an accurate black-body behavior with a temperature around 2.7 K. Although the microwave background is very smooth, the COBE satellite did detect small variations—at the level of one part in 100 000—in the temperature of the CMB from place to place in the sky. These ripples are caused by acoustic oscillations in the primordial plasma. While COBE

2 Decoupling particles in the early universe . . . . 124  
2.1 Thermal equilibrium in the early universe . . 125  
2.2 Thermal relics . . . . . 127  
3 Primordial nucleosynthesis . . . . . 129  
3.1 Standard big-bang nucleosynthesis . . . . 129  
3.2 Observations of primordial abundances . . 132  
3.3 On non-standard BBN models . . . . . 135  
3.4 Conclusions . . . . . 135  
4 The cosmic microwave background spectrum . . 135  
4.1 On the thermal nature of the CMB spectrum 135  
4.2 On observations of the CMB spectrum . . . 137

Bruce Yabsley Style guide

As the book will be published in EPJC, we will conform to that format; e.g. table layout and figures etc.

N.B. Don't copy block text from existing publications.

- Inappropriate level for the book!
- Copyright issues!

# Computing

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Account	View Drafts	Read/Write Hypernews	Actively work on latex
none	yes	—	—
hypernews (HN)	yes	yes	—
SLAC + HN	yes	yes	yes

For accounts, please see one of the following links:

<http://www.slac.stanford.edu/xorg/BFLB/bflb-new-account-help.html>

<http://www2.slac.stanford.edu/comp/slacwide/account/account.html>

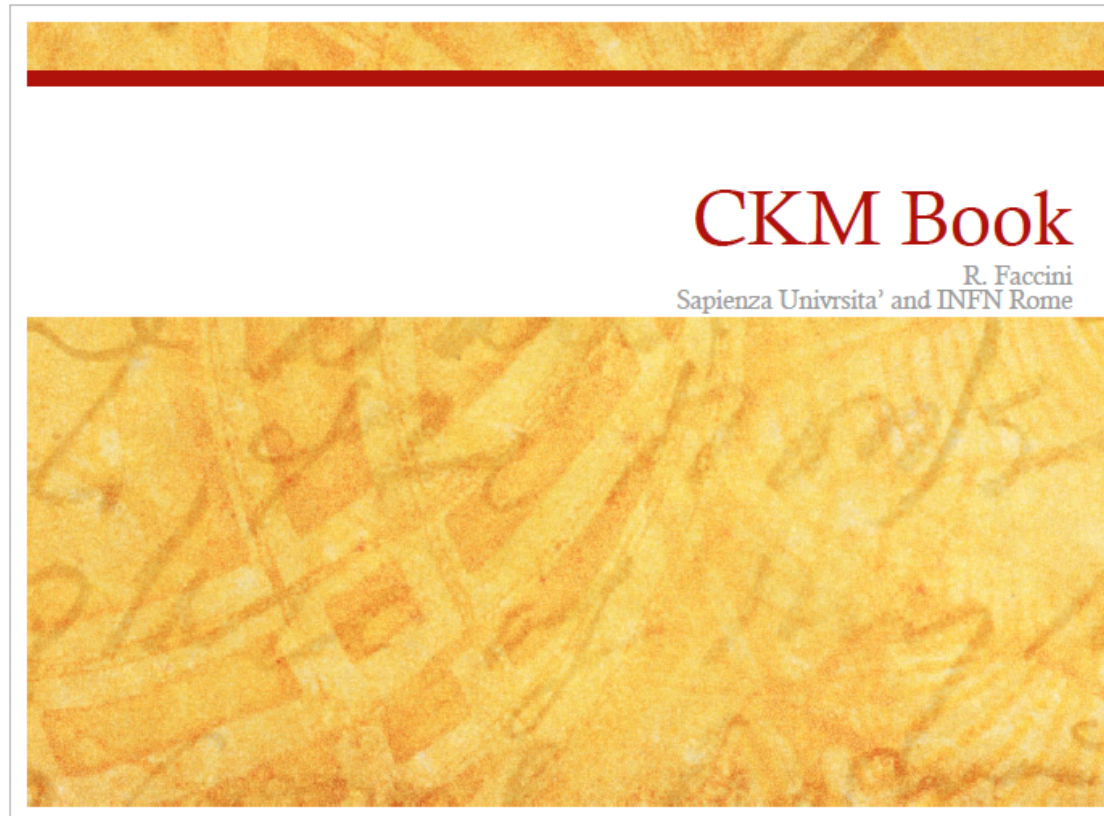
Don't forget cyber security.

Make sure if you already have a SLAC account that you are a member of the bflb group.



# Recent experience from similar efforts

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Riccardo discussed his experience with the CKM book.

The wisdom imparted will be useful for us to think about how we move forward over the coming year.

Let's build on the momentum we have and get started with writing!

Note: We plan to give a short presentation on the project at the CKM Workshop 2010 (Warwick) to let the wider community know about our activity.

# Choice of Notation

The result of the coin toss was:

Angles:

$$\phi_1, \phi_2, \phi_3$$

Other:

$S, C, m_{ES}$  etc.

## *Ceremonial coin toss and workshop summary*

- *Tuesday afternoon*
  - 16:20 Ceremonial Coin Toss
  - 16:50 Summary
    - Action items from workshop
  - Close out



**We will introduce both common notations at the first instance, and then use the above notation for the rest of the book.**



# Next steps

---

- We will digest feedback from the community over the next two weeks.
  - Send us your preferences on which section ordering you prefer: normal, inverted, mixed hierarchy.
- In parallel latex templates will be finalised and put into SVN.
- Then we will release latex for people to start writing, and post an announcement to the HN.
  - The template for stand alone editing will also be announced soon!
- Section editors will start taking more of a lead role in activities from now on!

# Homework for section editors

---

- 1) Talk to your co section editors (expt + theory).
- 2) If you've not already done so – please send us written confirmation of how much space your section will be,
  - + an initial pass of the sub-sections.
  - Figures you plan to include
  - tables...
- 3) Inform us of your contributors/recruit helpers as needed.
- 4) Experts (young proof readers) volunteer for sections that you think are appropriate.

# Closing remarks

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- Thanks to ...
  - Sarodia for organising the agenda, travel etc.
  - Yokoyama san, Oishi san (Belle secretariat) for local organisation and support/party.
  - Hara san for technical assistance (and getting up early to make sure that everything ran so smoothly).
  - all of you for making the effort to attend this meeting. Have a safe trip home!
- ... and finally: Get well Ikaros! We hope to see you soon.

# Next meeting

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- Will follow on from where we leave today...
- Similar format, N.B. different sections will be reviewed; expect theory input for the sections!
- Also expect to have a number of sections with advanced drafts.
  - ... and some almost complete.
- Location – Europe; Date - early October 2010.
  - Details will follow soon (see HN posting)!