

# Physics of the B Factories: Computing Issues

<http://www.slac.stanford.edu/xorg/BFLB/>

3<sup>rd</sup> Physics of B-factories Meeting

JGU, Mainz, Germany

1<sup>st</sup> – 2<sup>nd</sup> October 2010

<http://indico.in2p3.fr/conferenceDisplay.py?confId=4124>

Adrian Bevan (a.j.bevan@qmul.ac.uk)

# Overview

---

- Previous talks on computing:

- H. Neal Oct. 2009:

- <http://indico.in2p3.fr/getFile.py/access?contribId=43&resId=0&materialId=slides&confId=2293>

- A. Bevan May 2010:

- <http://indico.in2p3.fr/getFile.py/access?contribId=2&sessionId=0&resId=0&materialId=slides&confId=2477>

- This talk:

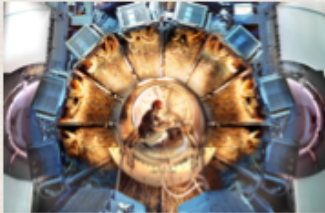
- Provide information on how to access the SVN repository, so that people can check out, modify and commit changes to the book.

- You will need to obtain a SLAC account for this.

- And then take a Cyber security test.


# Web Page

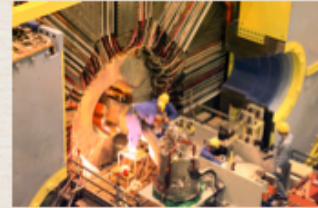
[Webmaster](#)



[BaBar Homepage](#)

## Physics of





[Belle Homepage](#)

# the B-Factories

2009  P  B	<a href="#">Home</a>
	<a href="#">Hypernews</a>
	<a href="#">Computing</a>
	<a href="#">Organization</a>
	<a href="#">Meetings &amp; Events</a>
	<a href="#">Book</a>

Over the last decade BaBar and Belle have studied the physics of bottom and charm mesons, tau leptons, heavy quarkonium states, etc. that were produced at the PEP-II and KEKB e+e- storage rings. The two collaborations continuously developed more and more sophisticated techniques for extracting the maximum amount of information from data.

Often these techniques have been used in many analyses. However, as most of BaBar's and Belle's 600+ publications are in Physical Review Letters, Physical Review D Rapid Communications, and Physics Letters where the page limits imposed by the journals do not allow for a full description of the analyses, many details of this work have never been published. The Physics of the

<http://www.slac.stanford.edu/xorg/BFLB/>

# Hypernews: New member Application Form:

New Membership page for BFLB HyperNews at hypernews.slac.stanford.edu

Member: homer (logout)

This page describes how to register as a new member of the BFLB HyperNews at hypernews.slac.stanford.edu HyperNews. Once you are a member, this can be used to access all forums at this site.

- To **register** as a new member, first make up a User ID and enter it immediately below. Make it something that you can remember and easily type - it may be a "nickname". Then fill in the rest of the form. You *should* provide a Name since it is used to identify you in messages. You *must* provide a new password since it protects you from unauthorized use of your User ID. Finally, click on the Register button.

User ID (nickname, no spaces, no '@', case sensitive):

homer

## Email and Subscription Options

BFLB HyperNews at hypernews.slac.stanford.edu will send you email each time you update your membership information. BFLB HyperNews at hypernews.slac.stanford.edu will also send you new postings via email if you "subscribe" to forums. A full internet Email address is required for this purpose. If you get a new email address, you can update your HyperNews email address here.

Email Address: (example: jdoe@my.home.net, case sensitive)

- |    |                         |           |
|----|-------------------------|-----------|
| 1. | homer@slac.stanford.edu | (Primary) |
| 2. |                         |           |
| 3. |                         |           |
| 4. |                         |           |
| 5. |                         |           |

The CZAR will be Soeren PRELL with Charlotte and Homer as backups.

Hide my Email Address:

- ☐ Do not show my Email address in messages or member lists.



# Hypernews: New member Application Form:pg 2

## Subscribe to:

- ☒ Only what I specify in each forum.  
☐ Nothing - Please **UNSUBSCRIBE** me from all forums at BFLB HyperNews at [hypernews.slac.stanford.edu](http://hypernews.slac.stanford.edu).
- 

## Personal Data

Please tell us about yourself. Your *Name* is used to identify you in your messages; otherwise your Email address or User ID is used. You can leave any of these fields blank, if you would prefer.

**Name** (example: John Doe):

**Personal Home Page URL** (example: <http://my.home.net/>):

**Reason for This New Account:** (example: referral, affiliation, etc) [Note: the account is moderated on this site.]

---

To specify your password, enter a new password here twice. You may use up to 8 characters. Note that BFLB HyperNews at [hypernews.slac.stanford.edu](http://hypernews.slac.stanford.edu) does not store your password in unencrypted form, so if you forget it, you will need to ask for a new password.

**DO NOT USE YOUR INTERNET LOGIN PASSWORD.**

**New Password:**

**New Password again:**


# Working on the Book: Accounts at SLAC

---

- The project is stored in the SVN version control software archive.
- To access this you will need an account at SLAC.
  - We expect the section editors to all have accounts.
  - Some of the active contributors may also require accounts if the section editors prefer they commit straight to SVN without.
  - The account creation process is relatively quick – but if you think you need an account, please arrange one now.
- Your account need to be a member of the bflb group.
  - [if you already have a SLAC account without this group privilege, please e-mail Soeren]

# Obtaining a SLAC account

[Webmaster](#)



## Computing

2009

P

B

F

2012

[Home](#)

[Hypernews](#)

**[Computing](#)**

[Organization](#)

[Meetings & Events](#)

[Book](#)

[News/Outreach](#)

[Institutions](#)

**On this page are presenting some documents and practical informations on Computing.**

For information and help about obtaining a SLAC account, please **click [here](#)**

Follow this link for instructions

Presentation on Computing presented at the 1st Physics of the B-Factories Workshop (30-31 October 2009 @ SLAC) :

**[PBF Computing](#)**  
*By Homer Neal*

# Group membership: bflb

---

- The Physics of the B Factories activity uses the group bflb.
- Once you have an account you can check that you are a member of bflb using `ypgroup membership`:

```
[yakut15] ~ $ ypgroup membership
User 'bevan' is member of the following NIS groups:
→ bflb
  twobody
  bfact-b
```

- If you are not a member of this group, please contact Soeren and ask to be made a member (this should only affect people who already have SLAC accounts with another group; i.e. [ex-] BaBar members).
  - If you already have a SLAC account, but are not a member of the bflb group, please let me know at this meeting so that I can ask for this to be fixed.
  - If you realise this is a problem after the meeting, please contact Homer or Charlotte.



# Accessing the latex: SVN

---

- SVN is like CVS:
  - Modern incarnation that is 'better' than CVS.
  - Similar syntax.
  - SVN is what you've just used for the Belle TDR/SuperB White Papers.
- There is a layout for the book to help you organise your contributions.

- |                                      |                              |
|--------------------------------------|------------------------------|
| ■ Project:                           | Book/                        |
| ■ Working area [CVS HEAD/SVN trunk]: | Book/trunk/                  |
| ■ Sections:                          | sub-directories<br>in trunk. |
| ■ Instructions:                      | Book/README                  |

# Checking out the book

---

- The following command (issued from a SLAC computer) will check out the book:

```
svn checkout file:///nfs/slac/g/bflb/svn/Book/trunk
```

- Then you can:

```
cd Book/trunk/
```

- To change to the directory containing the latex.

Book/README contains the information (and example commands) you will need in order to start contributing to the book. So once you have checked out the latex, you won't need to refer back to this presentation for common svn commands. More information on SVN can be found at the following URL:

<http://svnbook.red-bean.com/>

# Checking out the book

---

- There are:
  - directories: one for each section.
  - pbf-YourSection.tex: one for each section (directory name matches YourSection)
  - pbf-book.tex etc. (see Bruce's talk).
- All you need to do to compile a tex version of your section is to run:
  - pbf-make-section YourSection
- and to compile the book, run:
  - pbf-make
- All sections, and a copy of the pdf file for the book are available online at:
  - [http://www.slac.stanford.edu/xorg/BFLB/draft\\_sections/book-sections.html](http://www.slac.stanford.edu/xorg/BFLB/draft_sections/book-sections.html)

# Taking a quick look at the book

---

## The whole book

- [Physics of the B Factories Book](#) [Everything]

## Section A: The Facilities

- Ch. 1 [The B Factories](#)
- Ch. 2 [The Detectors and Collaborations](#)
- Ch. 3 [Datataking and Monte Carlo Production summary](#)

## Section B: Tools and Methods

- Ch. 4 [Vertexing](#)
- Ch. 5 [Multivariate discriminants](#)
- Ch. 5.1 [Analysis optimization](#)
- Ch. 5.2 [Particle identification](#)
- Ch. 5.3 [Flavor tagging](#)
- Ch. 5.4 [Background discrimination](#)
- Ch. 6 [B-meson reconstruction](#)
- Ch. 7 [Mixing and time-dependent analysis](#)
- Ch. 8 [Maximum likelihood fitting](#)
- Ch. 9 [Angular analysis](#)
- Ch. 10 [Dalitz analysis](#)
- Ch. 11 [Blind analysis](#)
- Ch. 12 [Systematic error estimation](#)

## Section C: The Results and their Interpretation

- Ch. 13 [The CKM matrix and the Kobayashi-Maskawa mechanism](#)

[http://www.slac.stanford.edu/xorg/BFLB/draft\\_sections/book-sections.html](http://www.slac.stanford.edu/xorg/BFLB/draft_sections/book-sections.html)

There is now a web page with links to sections for the book.

The pdf files are updated automatically every hour.



# Committing changes back to SVN

---

- Always update to merge your version with the latest updates in the repository:
  - `svn update`
- If there are conflicts between versions, resolve these by hand.
- Then commit the changes:
  - `svn commit -m 'some useful message'`
- You can check the differences between your version of the book and the trunk with:
  - `svn diff`

# Adding files / seeing book

---

- If you want to schedule files (e.g. figures) to add to the repository, you will need to run
  - `svn add <somefilename>`before doing the svn commit.
- Working offsite:
  - Please see the hypernews posting for details of how to work on the book from a remote computer:
  - <http://hypernews.slac.stanford.edu/HyperNews/BFLB/get/Computing/2/1/1/1.html>
  - `svn co svn+ssh://<your-login>@noric10.slac.stanford.edu/nfs/slac/g/bflb/svn/Book/trunk`

# Tags and Backing up the work

---

- Two stages:
  - The SVN database: this is automatically backed up by SCS
  - Instances of the trunk: There is a daily tagging cron job that runs once a day. This tags the trunk, so that if for any reason you need to refer back to an old version you can do so. The list of available tags is maintained at the following URL:
    - <http://www.slac.stanford.edu/xorg/BFLB/taglist.txt>
- The tag name format is YYYYMMDD, e.g. 2010Sep28, and all tags reside in Book/tags/.

# Things in the pipeline

---

- A script to check for tex that doesn't compile.
- An offsite backup of the project.
- Any requests?