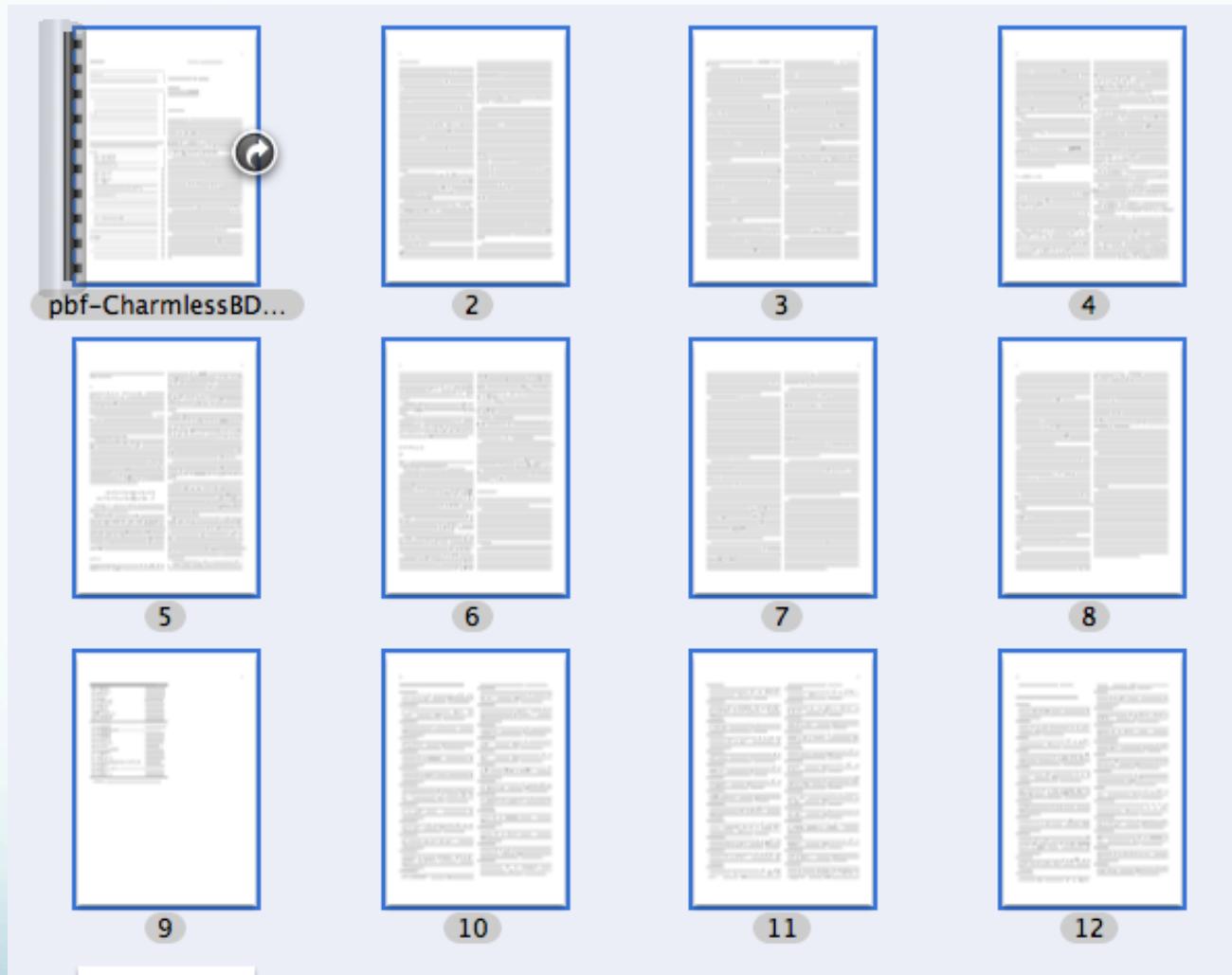


Charmless B decay section

- Quasi-2Body and 3-Body modes.
- Most 2-body modes covered in angles section.
- 20 page total.
- Most of the 160 papers are referenced (and read).
- Updates regularly committed to cvs.

Section looks like this



3-Body section

- Experimental section in a good state.
- Have an initial list of results
- Need to explain in more detail the relation to CKM angles.

Final State	Reference
$B^\pm \rightarrow K^+ \pi^\mp \pi^-$	(Garmash, 2005)
$B^\pm \rightarrow K^+ K^+ \pi^-$	(Garmash, 2005)
$B^0 \rightarrow K^0 \pi^+ \pi^-$	(Garmash, 2007)
$B^0 \rightarrow (\rho\pi)^0$	(Aubert, 2007d)
$B^0 \rightarrow K^+ K^- K_S^0$	arXiv:1007.3834
$B^\pm \rightarrow K^\pm \pi^\mp \pi^\pm$	(Aubert, 2008b)
$B^0 \rightarrow K_S^0 \pi^+ \pi^-$	(Dalseno, 2009)
$B^0 \rightarrow K_S^0 \pi^+ \pi^-$	(Aubert, 2009h)
$B^0(\bar{B}^0) \rightarrow K^\pm \pi^\mp \pi^0$	(Aubert, 2008a)
$B^\pm \rightarrow K^\pm K^\pm K^\mp$	(Aubert, 2006d)
$B^+ \rightarrow \pi^\pm \pi^\pm \pi^\mp$	(Aubert, 2009a)
$B^0 \rightarrow K_S^0 K_S^0 K_S^0$	(Sumisawa, 2005)
$B^0 \rightarrow K_S^0 K_S^0 K_S^0(\eta' K_S^0)$	(Chen, 2007)
$B^0 \rightarrow K_S^0 K_S^0 K_S^0$	(Aubert, 2005b)
$B^0 \rightarrow K_S^0 K_S^0 K_S^0$	(Aubert, 2007b)
$B^+ \rightarrow \pi^\pm \pi^\pm \pi^\mp$	(Aubert, 2005a)
$B^0 \rightarrow K^+ K^- K_S^0$	(Aubert, 2007f)
$B^+ \rightarrow \chi_{c0} K^+$	(Abe, 2002)
$B^0 \rightarrow (\pi^0, \eta, \eta') K_S^0 K_S^0$	(Aubert, 2009f)
$B^+ \rightarrow K_S^0 K_S^0 \pi^+$	(Aubert, 2009g)
$B^- \rightarrow K^+ \pi^- \pi^-$	(Aubert, 2008h)
$B^- \rightarrow K^- K^- \pi^+$	(Aubert, 2008h)
$B^0 \rightarrow \omega K_S^0, f_0(980) K_S^0, K_S^0 \pi^0, K^+ K^- K_S^0$	(Abe, 2007b)
$B^0 \rightarrow K_S^0 \pi^+ \pi^-$	(Aubert, 2004b)
$B^0 \rightarrow K_S^0 \pi^+ \pi^- (K^{*+} \pi^-)$	(Aubert, 2006f)
$B^0 \rightarrow K_S^0 \pi^0 \pi^0$	(Aubert, 2007c)
$B^+ \rightarrow K^+ K^- \pi^+$	(Aubert, 2007k)

Table 2. Dalitz Results (to be updated with numbers).

Q2Body

- Most 2 body modes are described in angles sections.
- Identified ~8 sub-sections defined in terms of the final states (see 2nd workshop in KEK).
- Large number of decays to describe
 - $a_1, a_0, b_1, K_1, \rho, \omega, \phi, \chi, \eta, \eta', f_0, f_2, K^*$... and all combinations.
- Words are in the document but not necessarily in the right order.
- Some modes are missing.

Outstanding Items

- No theory description yet.
 - In Q2B section the theory is introduced when a decay calls for it.
 - Much better to have a general introduction to SCET, factorization etc...
 - Would it make sense to put in theory predictions in tables?
 - Selecting the right prediction may be contentious.
- Q2Body sections needs some cleaning up.
 - Current draft does not have a coherent description of the results.
 - How do this is related to how the theory introduction is organized.
- Plots
 - Take up a lot of room but needed to brighten up discussion.

Outstanding Items

- Tables
 - A large number of results requiring multi-column layout e.g. (BF, Acp, phases) x (BaBar, Belle, Average) = 9. How to make table?
 - The reference is a substantial part of the table e.g. "(Aubert, 2009d)"
- Missing any new papers after ~June 2010.
 - Standard Spires/Inspires searches no longer work (see next slide for example).
 - Need to vary search criteria. Time-consuming but not difficult.
- Where to put full angular analyses?
 - See what goes in angular analysis section and just refer to that.

Unhelpful article searches

FF Wilson

[printable version] [new version]

Order by: Year | Title | First Author

1 to 13 of 13 | Start | Previous | Next

Work

Au. B Aubert (Annecy, LAPP), Au. A Boucham (Annecy, LAPP), Au. D Boutigny (Annecy, LAPP), Au. I De Bonis (Annecy, LAPP), Au. J Favier (Annecy, LAPP), Au. JM Gaillard (Annecy, LAPP), et al (576)

A Measurement of the B0 - anti-B0 oscillation frequency and determination of flavor tagging efficiency using semileptonic and hadronic B0 decays
BABAR-CONF-00-08, SLAC-PUB-8530, *30th International Conference on High-Energy Physics (ICHEP 2000), Osaka, Japan, 27 Jul - 2 Aug 2000*,
ex/0008052 [arXiv:hep-ex/0008052] [<http://www.slac.stanford.edu/archive/hep-ex/2000/08/>] [<https://oraweb.slac.stanford.edu/archive/hep-ex/2000/08/>] [<https://oraweb.slac.stanford.edu/archive/hep-ex/2000/08/>]
CCLRC PPD BABAR

Au. B Aubert (Annecy, LAPP), Au. A Boucham (Annecy, LAPP), Au. D Boutigny (Annecy, LAPP), Au. I De Bonis (Annecy, LAPP), Au. J Favier (Annecy, LAPP), Au. JM Gaillard (Annecy, LAPP), et al (576)

A Measurement of the branching fraction of the exclusive decay B0 → K*0 gamma
BABAR-CONF-00-12, SLAC-PUB-8534, *30th International Conference on High-Energy Physics (ICHEP 2000), Osaka, Japan, 27 Jul - 2 Aug 2000*,
ex/0008055 [arXiv:hep-ex/0008055] [<http://www.slac.stanford.edu/archive/hep-ex/2000/08/>] [<https://oraweb.slac.stanford.edu/archive/hep-ex/2000/08/>] [<https://oraweb.slac.stanford.edu/archive/hep-ex/2000/08/>]
CCLRC PPD BABAR

Au. B Aubert (Annecy, LAPP), Au. A Boucham (Annecy, LAPP), Au. D Boutigny (Annecy, LAPP), Au. I De Bonis (Annecy, LAPP), Au. J Favier (Annecy, LAPP), Au. JM Gaillard (Annecy, LAPP), et al (576)

A Measurement of the charged and neutral B meson life-times using fully reconstructed decays
BABAR-CONF-00-07, SLAC-PUB-8529, *30th International Conference on High-Energy Physics (ICHEP 2000), Osaka, Japan, 27 Jul - 2 Aug 2000*,
ex/0008060 [arXiv:hep-ex/0008060] [<http://www.slac.stanford.edu/archive/hep-ex/2000/08/>] [<https://oraweb.slac.stanford.edu/archive/hep-ex/2000/08/>] [<https://oraweb.slac.stanford.edu/archive/hep-ex/2000/08/>]
CCLRC PPD BABAR

Symbols Table

Ibabar	BABAR	babar	BABAR	belle	Belle
electron	e	en	e^-	ep	e^+
epm	e^\pm	epem	e^+e^-	ee	e^-e^-
mmu	μ	mup	μ^+	mun	μ^-
mumu	$\mu^+\mu^-$	mtau	τ	taup	τ^+
taum	τ^-	tautau	$\tau^+\tau^-$	ellm	ℓ^-
ellp	ℓ^+	ellell	$\ell^+\ell^-$	nub	$\bar{\nu}$
numub	$\nu\bar{\nu}$	nub	$\bar{\nu}$	numub	$\nu\bar{\nu}$
nue	ν_e	nueb	$\bar{\nu}_e$	nuenueb	$\nu_e\bar{\nu}_e$
num	ν_μ	numb	$\bar{\nu}_\mu$	numnumb	$\nu_\mu\bar{\nu}_\mu$
nut	ν_τ	nutb	$\bar{\nu}_\tau$	nutnuth	$\nu_\tau\bar{\nu}_\tau$
nul	ν_ℓ	nulb	$\bar{\nu}_\ell$	nulnulb	$\nu_\ell\bar{\nu}_\ell$
g	γ	gaga	$\gamma\gamma$	ggstar	$\gamma\gamma^*$
ega	$e\gamma$	game	γe^-	epemg	$e^+e^- \gamma$
H	H^0	Hp	H^+	Hm	H^-
Hpm	H^\pm	W	W	Wp	W^+
Wm	W^-	Wpm	W^\pm	Z	Z^0
q	q	qbar	\bar{q}	qqbar	$q\bar{q}$
u	u	ubar	\bar{u}	uubar	$u\bar{u}$
d	d	dbar	\bar{d}	ddbar	$d\bar{d}$
s	s	sbar	\bar{s}	ssbar	$s\bar{s}$
c	c	cbar	\bar{c}	ccbar	$c\bar{c}$
b	b	bbar	\bar{b}	bbbar	$b\bar{b}$
t	t	tbar	\bar{t}	tbar	\bar{t}
ttbar	$t\bar{t}$	ccbars	$\bar{c}\bar{s}$	piz	π^0
pizs	$\pi^0 s$	ppz	$\pi^0 \pi^0$	pip	π^+
pim	π^-	pipi	$\pi^+\pi^-$	pipm	π^\pm
pimp	π^\mp	kaon	K	Kb	\bar{K}
Kz	K^0	Kzb	\bar{K}^0	KzKzb	$K^0\bar{K}^0$
Kp	K^+	Km	K^-	Kpm	K^\pm
Kmp	K^\mp	KpKm	K^+K^-	KS	K_s^0
KL	K_L^0	Kstarz	K^{*0}	Kstarzb	\bar{K}^{*0}
Kstar	K^*	Kstarb	\bar{K}^*	Kstarp	K^{*+}
Kstarm	K^{*-}	Kstarpm	$K^{*\pm}$	Kstarmp	$K^{*\mp}$
etapr	η'	azero	a_0	azeroz	a_0^0
azerop	a_0^\pm	azerom	a_0^0	azeropm	a_0^\pm
aone	$a_1(1260)$	aonez	$a_1^0(1260)$	aonep	$a_1^+(1260)$
aonem	$a_1^-(1260)$	aonepm	$a_1^\pm(1260)$	bone	b_1^-
bonez	b_1^0	bonep	b_1^+	bonem	b_1^-
bonepm	b_1^\pm	rholz	ρ_1^0	rhop	ρ_1^+
rhom	ρ^-	rhomp	ρ^\pm	rhomp	ρ^\mp
fz	$f_0(980)$	D	D	Db	\bar{D}

Table 1: Major symbols defined in pbf-sym.tex

gevcc	GeV/c^2	mevcc	MeV/c^2	syin	"
inch	in	ft	ft	km	km
m	m	cm	cm	mm	mm
mum	μm	nm	nm	fm	fm
nm	nm	cma	cm^2	mma	mm^2
muma	μm^2	barn	b	barnhyp	-b
mbarn	mb	mbarnhyp	-mb	nb	nb
pb	pb	fb	fb	invnb	nb^{-1}
invpb	pb^{-1}	invfb	fb^{-1}	invab	ab^{-1}
gm	g	sec	s	ms	ms
mus	μs	ns	ns	ps	ps
fs	fs	red	red	green	green
blue	blue	eg	e.g.	etc	etc.
Xrad	X_0	NIL	λ_{int}	todo	<i>To be completed.</i>
cms	$\text{cm}^{-2}\text{s}^{-1}$	mic	μC	krad	krad
cmc	cm^3	yr	yr	hr	hr
degc	${}^\circ\text{C}$	degk	K	degrees	${}^\circ$
mrad	mrad	rad	rad	mradhyp	-mr
sx	σ_x	sy	σ_y	sz	σ_z
order	\mathcal{O}	L	\mathcal{L}	callL	\mathcal{L}
calS	\mathcal{S}	calA	\mathcal{A}	calD	\mathcal{D}
calR	\mathcal{R}	calB	\mathcal{B}	ra	\rightarrow
to	\rightarrow	stat	(stat)	syst	(syst)
pep	PEP-II	BF	B Factory	abf	asymmetric B Factory
inverse	-1	dedx	dE/dx	chisq	χ^2
lum	\mathcal{L}	gsim	$\tilde{\mathcal{Z}}$	lsim	$\tilde{\mathcal{Z}}$
qsq	q^2	kbytes	kbytes	kbytes	kbytes/s
kbits	kbits	kbitss	kbits/s	mbytes	Mbytes/s
mbytes	Mbytes	mbps	Mbyte/s	mbps	Mbytes/s
gbps	Gbytes/s	gbytes	Gbytes	gbps	Gbytes/s
tbytes	Tbytes	tbpy	Tbytes/yr	kHz	kHz
MHz	MHz	Watt	W	miWatt	mW
muWatt	μW	as	α_s	MSb	$\overline{\text{MS}}$
LMSb	$\Lambda_{\overline{\text{MS}}}$	tw	θ_w	twb	θ_w
eps	ε	epsK	ε_K	epsB	ε_B
epsp	ε'_K	CP	CP	CPT	CPT
C	C	P	P	T	T
rholbar	$\bar{\rho}$	etabar	$\bar{\eta}$	meas	$ V_{cb} , V_{ub} , \varepsilon_K , \Delta m_{B_d}$
DeltaS	ΔS	DeltaC	ΔC	epstag	ε_{tag}
epstagbz	ε_{B^0}	epstagbz	$\varepsilon_{\bar{B}^0}$	epstagc	ε_c
epstagasym	$\Delta\varepsilon_{tag}$	wtag	w	wtagbz	w_{B^0}
wtagbz	$w_{\bar{B}^0}$	wtagc	w_c	wtagasym	Δw

Table 3: Major symbols defined in pbf-sym.tex

Will add to SVN next week + fixes to pbf-sym.tex

Symbols Table

Dp	D^+	Dm	D^-	Dpm	D^\pm
Dmp	D^\mp	DpDm	D^+D^-	Dstar	D^*
Dstarb	\bar{D}^*	Dstarz	D^{*0}	Dstarzb	\bar{D}^{*0}
Dstarp	D^{*+}	Dstarm	D^{*-}	Dstarpm	$D^{*\pm}$
Dstarmrp	$D^{*\mp}$	Ds	D_s^+	Dsb	\bar{D}_s^+
Dss	D_s^{*+}	Dmix	$D^0 - \bar{D}^0$	dstrstr	D^{**}
B	B	Bb	\bar{B}	BB	$B\bar{B}$
Bz	B^0	Bzb	\bar{B}^0	BzBzb	$B^0\bar{B}^0$
Bp	B^+	Bm	B^-	Bpm	B^\pm
Bmp	B^\mp	Bs	B_s	Bsb	\bar{B}_s
Btag	B_{tag}	Brec	B_{rec}	Bflav	B_{flav}
Bmix	$B^0 - \bar{B}^0$	jpsi	J/ψ	psitwos	$\psi(2S)$
psiprpr	$\psi(3770)$	etac	η_c	chiczero	χ_{c0}
chicone	χ_{c1}	chictwo	χ_{c2}	etab	η_b
chibzero	χ_{b0}	chibone	χ_{b1}	chibtwo	χ_{b2}
Y{n}S	$\Upsilon(nS)$	OneS	$\Upsilon(1S)$	TwoS	$\Upsilon(2S)$
ThreeS	$\Upsilon(3S)$	FourS	$\Upsilon(4S)$	FiveS	$\Upsilon(5S)$
chic{n}	χ_{cn}	proton	p	antiproton	\bar{p}
neutron	n	antineutron	\bar{n}	X	X
BR	\mathcal{B}	BRtauptoe	$\mathcal{B}(\tau^+ \rightarrow e^+)$	BRtaumtoe	$\mathcal{B}(\tau^- \rightarrow e^-)$
BRtauptoe	$\mathcal{B}(\tau^+ \rightarrow \mu^+)$	BRtaumtomu	$\mathcal{B}(\tau^- \rightarrow \mu^-)$	etaprepp	$\eta' \rightarrow \eta \pi^+ \pi^-$
etaprgrg	$\eta' \rightarrow \rho^0 \gamma$	bpsiks	$B^0 \rightarrow J/\psi K_s^0$	bpsikst	$B^0 \rightarrow J/\psi K^*$
bpsikl	$B^0 \rightarrow J/\psi K_L^0$	bpsiX	$B^0 \rightarrow J/\psi X$	Bzbtomu	$\bar{B}^0 \rightarrow \mu X$
Bzbtox	$\bar{B}^0 \rightarrow X$	Bztopipi	$B^0 \rightarrow \pi^+ \pi^-$	Bztkoppi	$B^0 \rightarrow K^\pm \pi^\mp$
Bztorhopi	$B^0 \rightarrow \rho^+ \pi^-$	Bztorhorho	$B^0 \rightarrow \rho \rho$	Bztrkho	$B^0 \rightarrow K \rho$
Bztkostpi	$B^0 \rightarrow K^* \pi$	Bztopapi	$B^0 \rightarrow a_1 \pi$	Bztodd	$B^0 \rightarrow D^+ D^-$
Bztdstd	$B^0 \rightarrow D^* + D^-$	Bztdstdst	$B^0 \rightarrow D^* + D^{*-}$	BtdDK	$B \rightarrow D K$
Btdstlnu	$B \rightarrow D^* \ell \nu$	Btdstdlnu	$B \rightarrow D^*(D) \ell \nu$	Btorholnu	$B \rightarrow \rho \ell \nu$
Btopilnu	$B \rightarrow \pi \ell \nu$	Btoetah	$B \rightarrow \eta h$	Boetaph	$B \rightarrow \eta' h$
Betaprks	$B^0 \rightarrow \eta' K_S^0$	Betaprkz	$B^0 \rightarrow \eta' K^0$	btosgam	$b \rightarrow s \gamma$
bto_leam	$b \rightarrow d \gamma$	btsll	$b \rightarrow s \ell^+ \ell^-$	btosnumu	$b \rightarrow s \nu \bar{\nu}$
btosgaga	$b \rightarrow s \gamma \gamma$	btosglue	$b \rightarrow sg$	upsbb	$\Upsilon(4S) \rightarrow e^+ \bar{e}^-$
upsbz	$\Upsilon(4S) \rightarrow B^0 \bar{B}^0$	upsbpbm	$\Upsilon(4S) \rightarrow B^+ B^-$	tauptoo	$\tau^+ \rightarrow e^+ \nu \bar{\nu}$
taumtoe	$\tau^- \rightarrow e^- \nu \bar{\nu}$	taumtomu	$\tau^+ \rightarrow \mu^+ \nu \bar{\nu}$	taumtomu	$\tau^- \rightarrow \mu^- \nu \bar{\nu}$
tauptopi	$\tau^+ \rightarrow \pi^+ \bar{\nu}$	taumtopi	$\tau^- \rightarrow \pi^- \nu$	ggtopi	$\gamma \gamma \rightarrow \pi^+ \pi^-$
ggtopiz	$\gamma \gamma \rightarrow \pi^0 \pi^0$	ptot	p	pxy	p_T
pt	p_T	mes	m_{ES}	mec	m_{EC}
DeltaE	ΔE	pbcm	$p_{B^0}^*$	mphi	ϕ
mtheta	θ	ctheta	$\cos \theta$	tev	TeV
gev	GeV	mev	MeV	kev	keV
ev	eV	gevc	GeV/c	mevc	MeV/c
gevcc	GeV/c^2	mevcc	MeV/c^2	syn	"

Table 2: Major symbols defined in pbf-sym.tex

Do we need all these decays defined as global definitions?

Plans and Status

- Smarten up Q2B section -July
- Finalize a first draft of the experimental section and get some reviewers (already identified) – July/August
- Add a few plots – July
- Add tables – August
- Theory – likely to be end of year.
- Mostly in good shape, on schedule for a close-to-final draft by end of year.