

November 2009 Production Status

David Brown

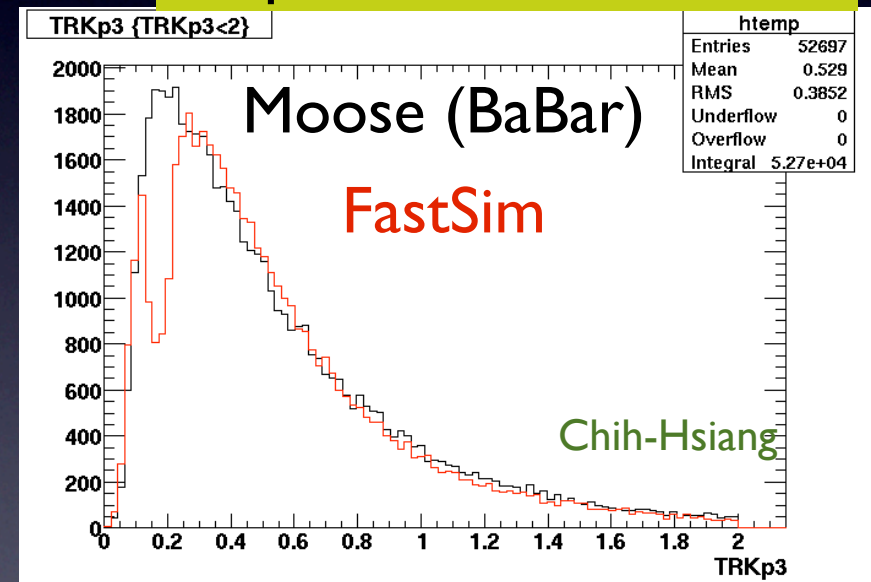
FastSim Production

- Events simulated from generation to physics tuple in one step
 - no event persistence
- Many analyses in parallel
 - Common parts run only once
 - K_{VV} , charm, S2B, 2-body,...
- Generator, detector + beam configuration, analyses run driven by script + xml
- Concentrate on generics
 - B^+B^- , $B^0\bar{B}^0$, $c\bar{c}$, uds

November Production Goals

- Repeat September 2009 production
 - Same resources, statistics
 - Same background simulation
 - More analyses
 - More generic modes
 - improve job submission
 - better validation
 - bug fixes
- Results in time for this meeting
 - help detector + analysis communities

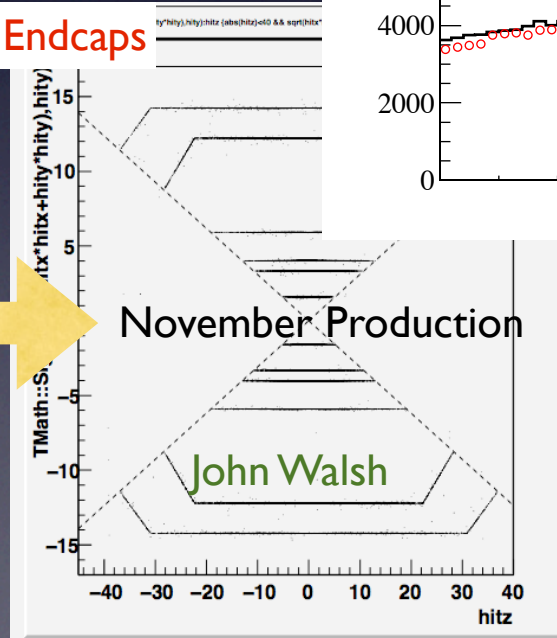
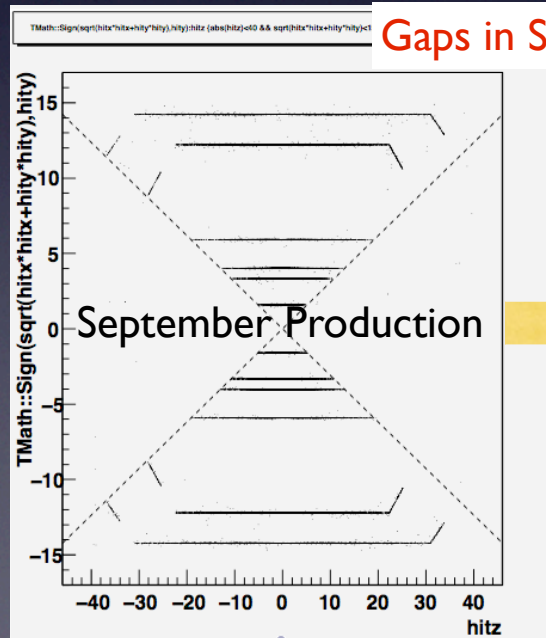
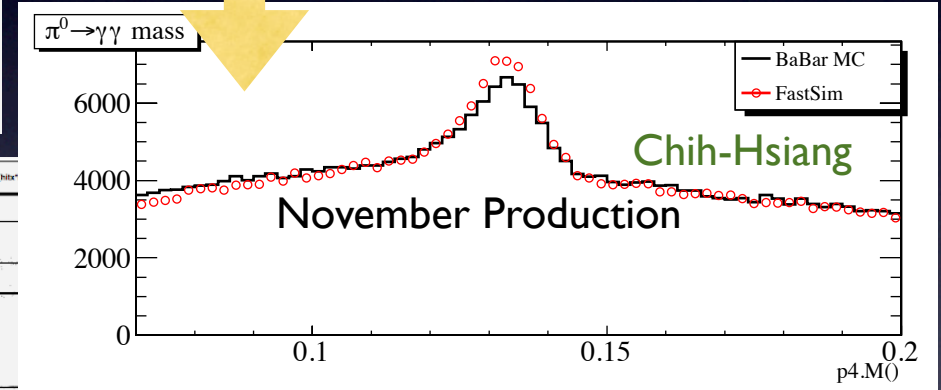
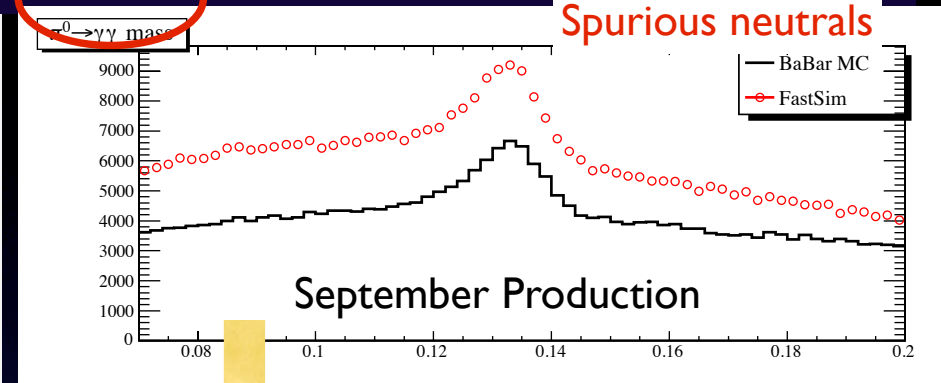
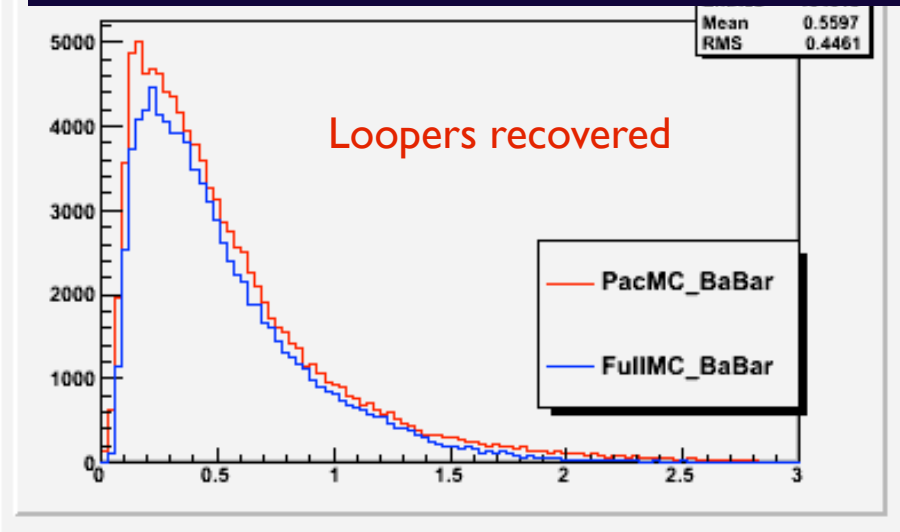
Track momentum
September Production



Production Prep

- Release V0.1.2
 - consolidate Patches used in September production
- Validation procedure established
 - Subsystem experts identified for Trk, Svt, Emc, Pid
 - scripts and macros (mostly) in PacQA package
 - Plots posted on the web
- Web-based job submission system developed
- FastSim fixes and improvements
 - Patches in V0.1.2

Fixes for November



Plus many memory fixes

Production Manager

The image displays two screenshots of the SuperB Production Manager web interface. The left screenshot shows the 'Production Initialization and Submission' form, and the right screenshot shows the 'Production Monitor' page.

Production Initialization and Submission Form:

Production Data

Production Series: 2009_November

Production root: /storage/gpfs_babar6/ab/prod/
Fast TAG: V0.1.2
ARCH: Linux26SL4_386_gcc346
Release working Directory: /home/BABAR/brownd/SuperB/FastSim/V0.1.2_prod/workdir/

Minimum Run Number: 30000
Software Revision: 179

Job Details

of Runs: 500 # of Events (per job): 100000 Generator: B+B--generic Geometry: DG_4

of Runs: 500 # of Events (per job): 100000 Generator: ccbar Geometry: DG_BaBar

of Runs: 100 # of Events (per job): 100000 Generator: tau+tau--kk2f Geometry: DG_4a

Submit Data and Generate Summary

SUMMARY

Fill in and submit the form above to generate the summary.

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Production Monitor:

PRODUCTION SERIES

Production Series: 2009_November

Production root: /storage/gpfs_babar6/ab/prod/
Fast TAG: V0.1.2
ARCH: Linux26SL4_386_gcc346
Release working Directory: /home/BABAR/brownd/SuperB/FastSim/V0.1.2_prod/workdir/

JOB DATA

Runnum start end	# of events	Generator	Geometry	Soft release	Job Status	Grid Status	Grid Job Id
30000		ALL	ALL	ALL	ALL	ALL	
34499							
4500 jobs found matching the search criteria.							
30000	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090550
30001	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090551
30002	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090552
30003	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090553
30004	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090554
30005	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090555
30006	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090556
30007	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090557
30008	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090558
30009	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090559
30010	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090560
30011	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090561
30012	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090562
30013	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090563
30014	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090564
30015	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090565
30016	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090566
30017	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090567
30018	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090568
30019	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090569
30020	100000	B0B0bar_generic	DG_BaBar	V0.1.2 179	done		2090570

JOB STATS

Status	# of jobs	events (10 ⁴ s)
done	3003	308.3
failed	738	73.8
running	679	67.9
Total	4500	450

First Run number: 30000
Last Run number: 34499

SETUP

logs-f
Show log files for jobs with status "failed"

logs-d
Show log files for jobs with status "done"

output
Show output files for jobs with status "done"

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Request Interface (wiki)

FastSimDoc/Prodseries/Nov09 - SuperBWiki

http://mailman.fe.infn.it/superbwiki/index.php/FastSimDoc/Prodseries/Nov09

Brownd my talk my preferences my watchlist my contributions log out

article discussion edit history move unwatch

FastSimDoc/Prodseries/Nov09

The November 2009 production series is intended to roughly repeat the August/September production, but with a few critical bugs fixed and a few analyses and modes added. Below is the intended production parameters, please feel free to add your request to the table until the production is finalized.

November 2009 production request table

Detector Geometry	Generator	N requested	Analysis	Requestor	Status	N produced
DG_1	B0B0bar_generic	50x10 ⁶	All	Dave	Complete	53.1 x10 ⁶
DG_1	B+B-_generic	50x10 ⁶	All	Dave	Complete	49.4x10 ⁶
DG_1	ccbar	50x10 ⁶	DstD0ToKspipi, HadRecoil	Rolf, Elisa	Complete	49.9x10 ⁶
DG_1	uds	100x10 ⁶	HadRecoil	Elisa	Complete	49.9x10 ⁶
DG_1	B+B-_tau_DX	1x10 ⁶	BtoTauNu	Chih-hsiang	Complete	1x10 ⁶
DG_4	B0B0bar_generic	50x10 ⁶	All	Dave	Complete	48.3x10 ⁶
DG_4	B+B-_generic	50x10 ⁶	All	Dave	Complete	48.7x10 ⁶
DG_4	ccbar	50x10 ⁶	HadRecoil	Elisa	Complete	49.8x10 ⁶
DG_4	uds	100x10 ⁶	HadRecoil	Elisa	Complete	49.3x10 ⁶
DG_4	B+B-_tau_DX	1x10 ⁶	BtoTauNu	Chih-hsiang	Complete	1x10 ⁶
DG_BaBar	B0B0bar_generic	50x10 ⁶	HadRecoil	Elisa	Complete	50x10 ⁶
DG_BaBar	B+B-_generic	50x10 ⁶	HadRecoil	Elisa	Complete	50x10 ⁶
DG_BaBar	ccbar	50x10 ⁶	DstD0ToKspipi, HadRecoil	Rolf, Elisa	Complete	50x10 ⁶
DG_BaBar	B+B-_tau_DX	1x10 ⁶	BtoTauNu	Chih-hsiang	Complete	1x10 ⁶

Output files can be found at CNAF at
(storage/cnfe_hbar6/eh/prod//2009-November/FastSim/\$(DG)/\$(Generator)/\$(Runnum) with one output file for each

Production Status

- ~5K jobs of 100K events each
 - $>5 \times 10^8$ events
- ~2Hz for $B\bar{B}$ events, ~6Hz $c\bar{c}$, ~10Hz uds
 - dominated by BReco times
 - BaBar geometry ~2X faster
- 750 failed jobs (no hangs)
 - log file size exceeded disk quota
 - code crash $\ll 1\%$ (3 jobs)
- Several TBytes output
 - dominated by charm analysis

Production Issues

- SVN (LDAP) problems delayed startup
 - backup repository?
- Memory leaks
 - one analysis disabled due to large leaks
- No production queue
 - production jobs competed with user jobs
- limited resources
 - ~500 slots@CNAF
- No 'official' production manager
 - jobs run as private person (me)
- Output files not merged (necessary?)

Production App Issues

- Lots of memory leaks from initialization, root
 - makes finding real leaks difficult
- Lots of runtime warnings

7% `UsrWriteBSemiExcl::UsrWriteBRecoBase.hh(63):Cannot put mES = 5.20683 for candidate UsrCandBlock`

1.5% `ptc of type 4 is too heavy to radiate Cerenkov photons (momentum = 0.865621 GeV, beta = 0.678079)`

1.3% `BToDstarTrigger::TrkGammaVertex.cc(147):parallel point not parallel!`

1% `TaggingKaonMicroSelection::PidDRCLike.cc(304):Invalid index -33 for trkQualBin 3 cangleBin 0 pbin -3 ipart 0`

0.3% `PmcReconstruct::PacReconstructTrk.cc(153):unphysical fit, track deleted`

0.1% `S2bBListTaggingDispatch::BtaRecoTrackingObject.cc(190):Poca to point failed: returnning flightlengh 0`

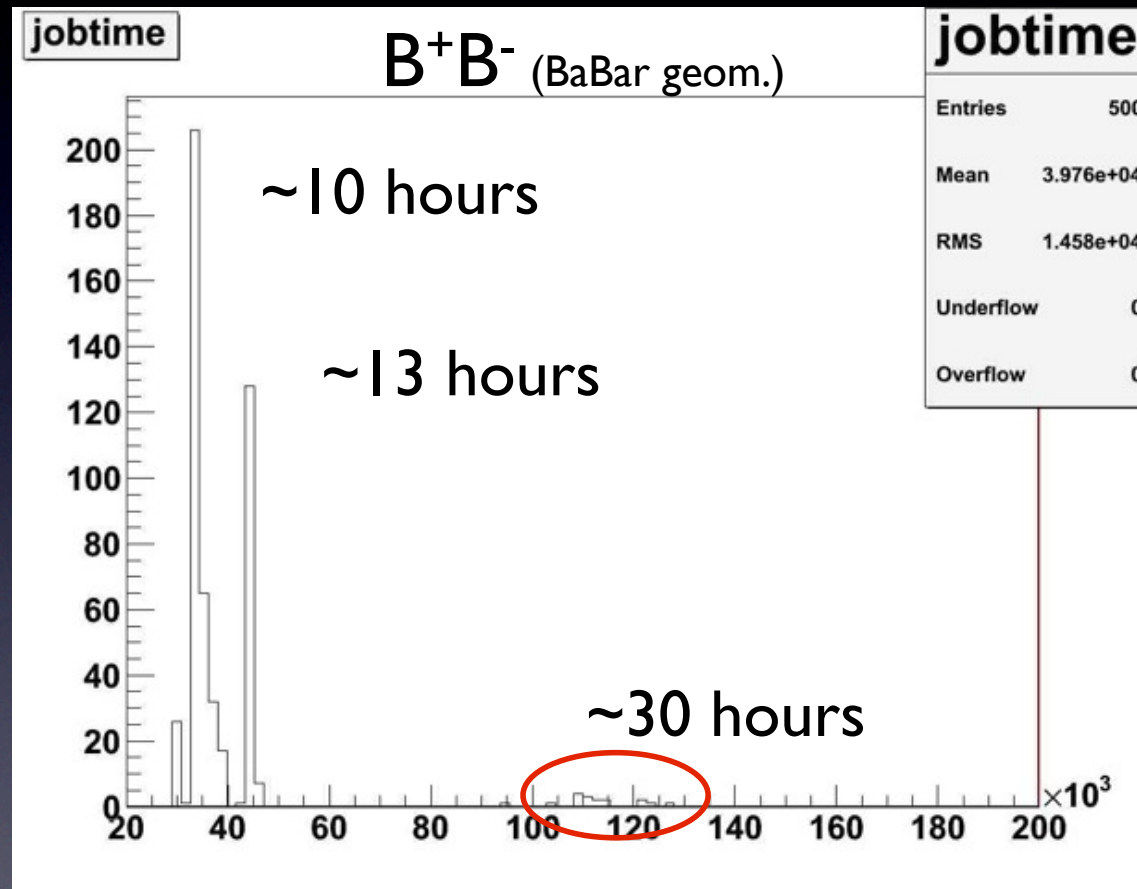
0.1% `BToDstar0Trigger::SmpListMaker.cc(228):Output list "Dstar0ToD0GammaHardLoose" reached maximum allowed`

0.02% `PmcReconstruct::TrkPocaBase.cc(192):Alleged oscillation detected. 6.64692 -4.92857 28`

0.02% `PmcSimulate::PacEMShower.cc(162):Interpolation failed in findShowerStart`

0.003% `EvtGen:Tried accept/reject: 10000 times, and rejected all the times!`

Job completion time



January Production

- First 'full-scale' production for TDR
 - ~10X scale of November production
- FullSim + FastSim production
- Physics reach + detector studies
 - how many geometries will we need to simulate?

Needed for January

- FastSim background modeling additions
 - pairs, Touschek, neutrons, ...
- Additional analyses (?)
- Job management improvements
 - web submission, automatic menu update, ...
- Additional resources will be required
 - Must use sites beyond CNAF
- Production Manager
 - dedicated position for ~1 month

Conclusions

- November production was a success
 - substantial improvements
 - substantial statistics
- Important lessons learned for the future
- January is only 1 month away!
 - Final developments are still under development
 - Target production start for Feb. 1st?