

November 2009 Production Status

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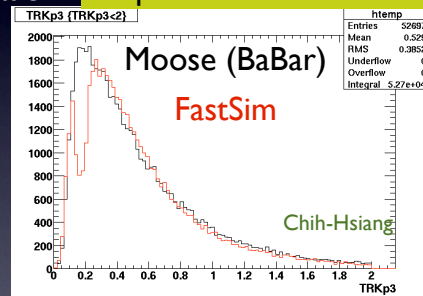
FastSim Production

- 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^- , $B^0\bar{B}^0$, cc.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

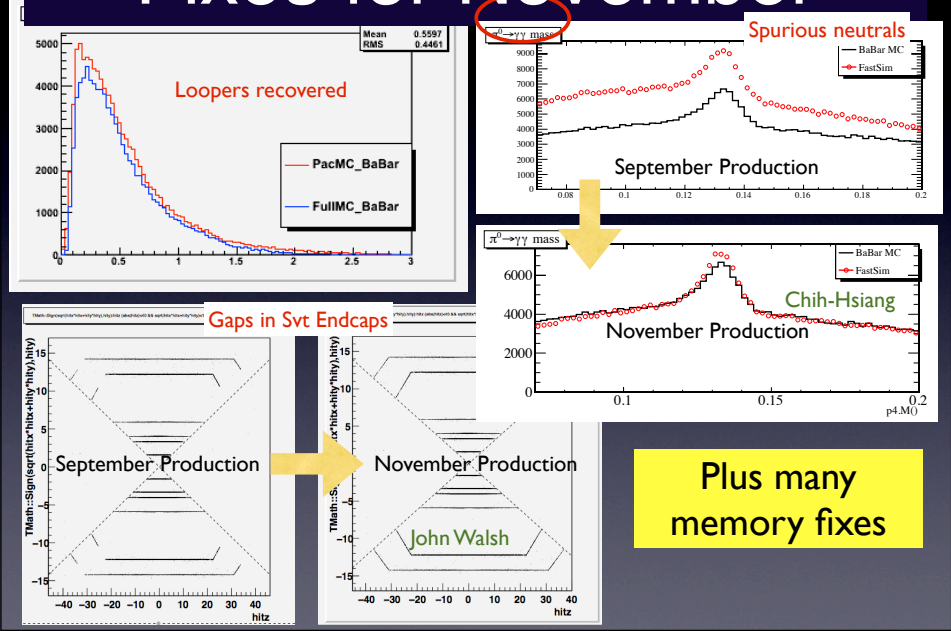
Track momentum
September Production



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



Production Manager

The image displays two overlapping screenshots of the SUPERT Production Manager web application. The top-left screenshot shows the 'Production Initialization and Submission' page, which includes a 'PRODUCTION DATA' section with fields for Production Series (2025), Production Name (0000), and Release version (V1.0). Below this is a 'JOB DETAILS' section with three rows of job configuration, each with fields for '# of Runs', '# of Events (per job)', 'Generator', 'Release', and 'Geometry'. A 'SUMMARY' section at the bottom contains a button to 'Submit Data and Generate Summary'.

The top-right screenshot shows the 'Production Monitor' page, which features a 'PRODUCTION DATA' section with the same configuration as the first page. Below this is a 'JOB STATUS' section with a table of job details. The table has columns for 'Release job id', '# of events', 'Generator', 'Release', 'Job Status', 'Grid Status', and 'Grid Job Id'. A 'SUMMARY' section on the right provides a quick overview of the job status.

Release job id	# of events	Generator	Release	Job Status	Grid Status	Grid Job Id
20000	10000	ALL	ALL	ALL	ALL	20000
4800 jobs found matching the search criteria.						
20000	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000000
20001	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000100
20002	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000200
20003	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000300
20004	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000400
20005	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000500
20006	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000600
20007	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000700
20008	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000800
20009	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2000900
20010	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001000
20011	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001100
20012	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001200
20013	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001300
20014	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001400
20015	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001500
20016	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001600
20017	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001700
20018	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001800
20019	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2001900
20020	10000	00000u_generic	DC_BuBar	V1.1.1.179	done	2002000

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Request Interface (wiki)

FastSimDoc/Prodseries/Nov09 – SuperBWiki

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

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	BOB0bar_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	BOB0bar_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	BOB0bar_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

Production Status

- ~5K jobs of 100K events each
 - $>5 \times 10^8$ events
- ~2Hz for $B\bar{B}$ events, ~6Hz $c\bar{c}$, ~10Hz $u\bar{d}$
 - 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

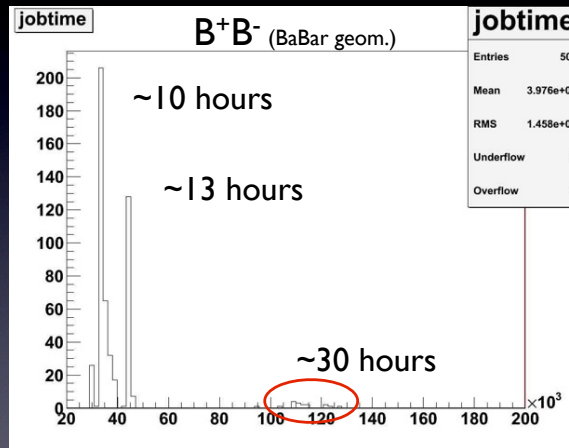
- SVN server problems delayed startup
 - backup repository?
- Memory leaks
 - one analysis disabled due to large leaks
- No production queue
 - production jobs competed with user jobs
- limited resources
 - ~500 slots@CNAF
- No 'official' production manager
 - jobs run as private person (me)

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: returning 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?