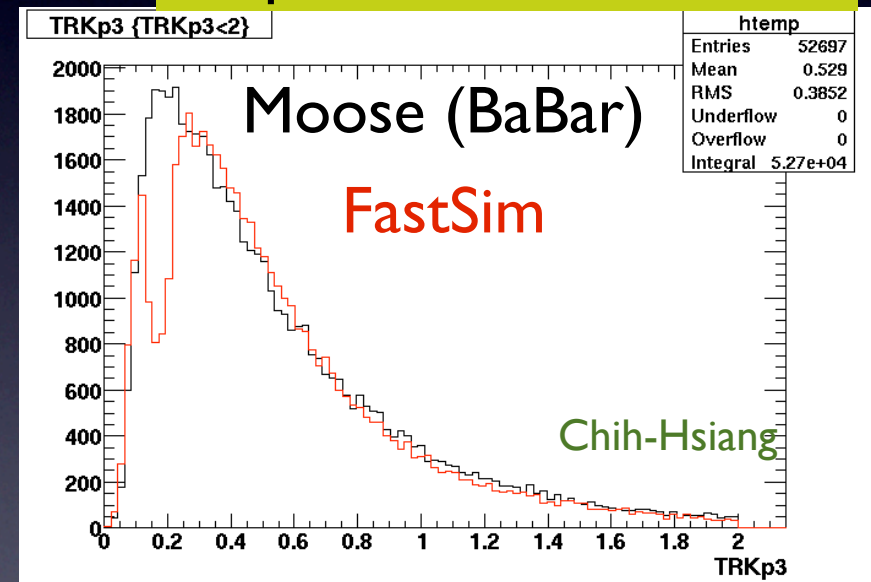# November 2009 Production Status

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$\nu\nu$, charm, S2B, 2-body,...

- Generator, detector + beam configuration, analyses run driven by script + xml

- Concentrate on generics

  - B+B-, B$^0\overline{\text{B}}^0$, c$\overline{\text{c}}$,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
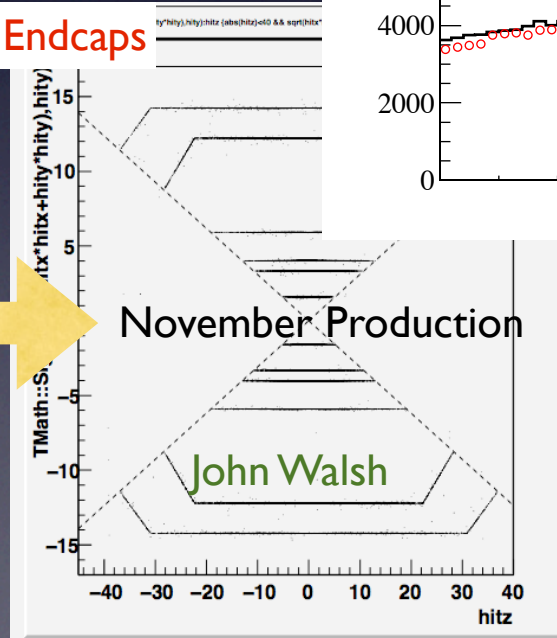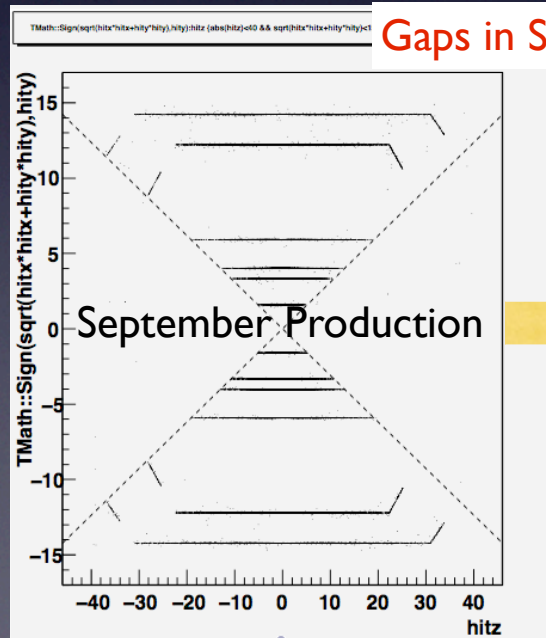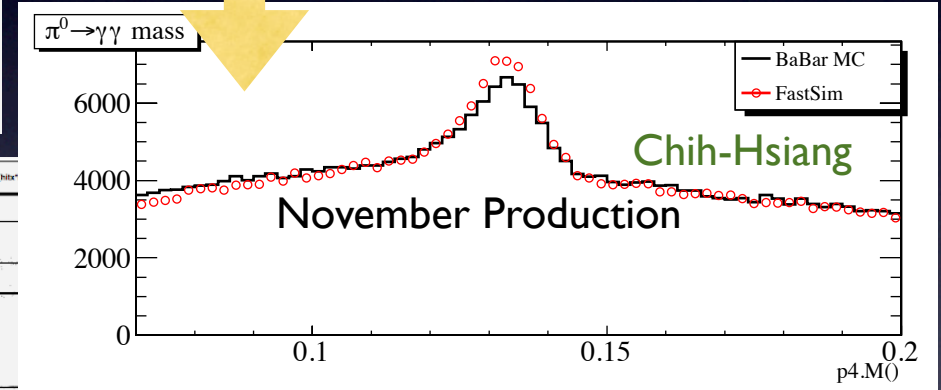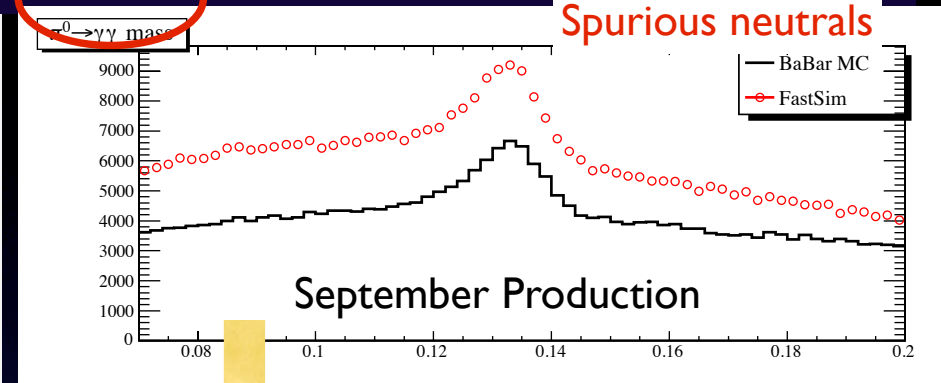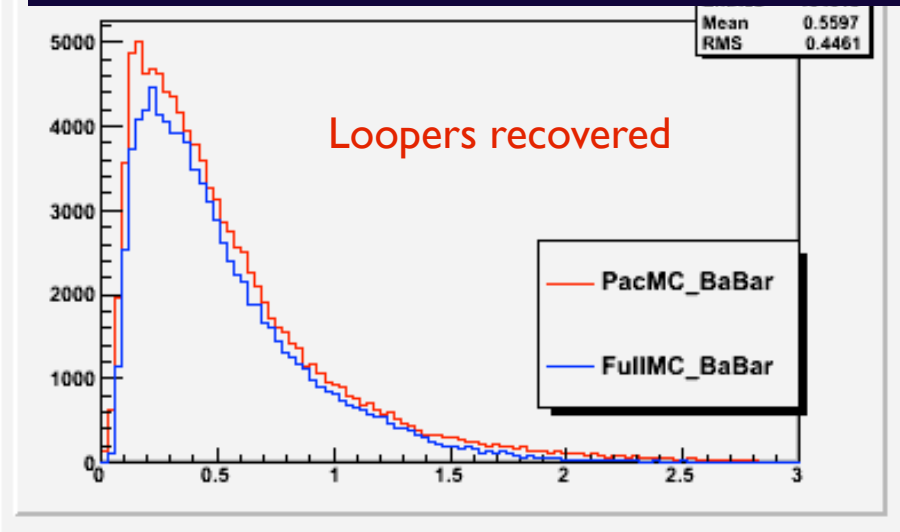 - help detector + analysis communities

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

Loopers recovered

Spurious neutrals

September Production

November Production

Chih-Hsiang

Gaps in Svt Endcaps

September Production

November Production

John Walsh

Plus many memory fixes

Production Manager

Armando Fella,
Luca Tomassetti,
Marco Ronzano,
Eleonora Luppi

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/gpfs_babar6/sb/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 << 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
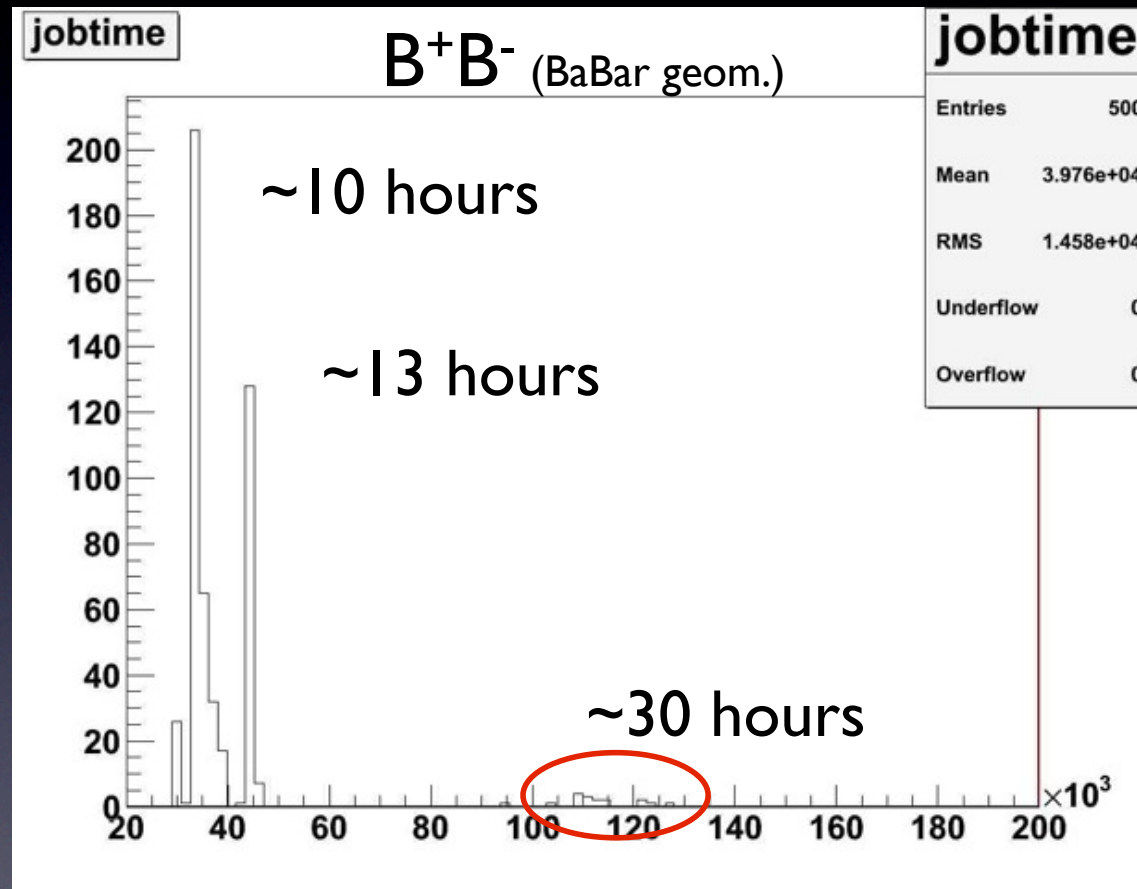
0.1% BToDstar0Trigger::SmpListMaker.cc(228):Output list "Dstar0ToD0GammaHardLoose" reached maximum allowed

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?