

# FastSim Production Status

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# Production Plans (Perugia)

- “July 09 test production”
- August 09 FullSim production
  - ~1M beamstrahlung background frames produced
- September 09 FastSim production
  - planned  $\sim 1\text{ab}^{-1}$  generic  $B^0B^0$ ,  $udsc$ , 2-photon, ...
  - Multiple detector geometries
  - Multiple analyses in parallel
- January 09 production
- July 09 production (TDR)

# 2009 September Production

- Actually produced  $\sim 200 \text{ fb}^{-1}$  generic  $B^0 B^0$
- Two detector geometries
  - 100M events each
- $\sim 4$  days running at CNAF
  - $\sim 500$  jobs at a time
- 2 out of 4 analyses active
  - one disabled due to excessive output
  - one disabled due to code problem
- 90% job success rate
  - 5% failed instantly from directory problem (fixed)
  - 1% crashed (code problem isolated + fixed)
  - 4% hung (not reproducible, under investigation)

# Background Mixing

- Used all 1M FullSim background frames
  - 5 files, 2GBytes each, merged from

# Production Output

2009 September Production Status											
jobs	Kevents/Job	Generator	DG	script error	hung	crash	# Successful	<sec>/event	Run # range	Mevents	
500	50	B0B0bar	1	42	7	1	450	0.35	10000-110499	22.5	
500	100	B0B0bar	1	9	22	2	454	0.35	130000-130499	45.4	
500	100	B+B-	1	12	20	2	466	0.35	150000-150499	46.6	
500	100	B0B0bar	4	9	17	6	468	0.38	120000-120499	46.8	
500	100	B+B-	4	7	18	3	472	0.38	140000-140499	47.2	

Output						
Selection rate						
Analysis	KByte/event	B0 DG1	B+ DG1	B0 DG4	B+ DG4	total size MBytes
Hadronic K*nunu	5.4	5.60%	7.10%	6%	7.70%	40000
Sin2Beta	2.7	2.30E-05	1.80E-06	2.20E-05	1.60E-06	70

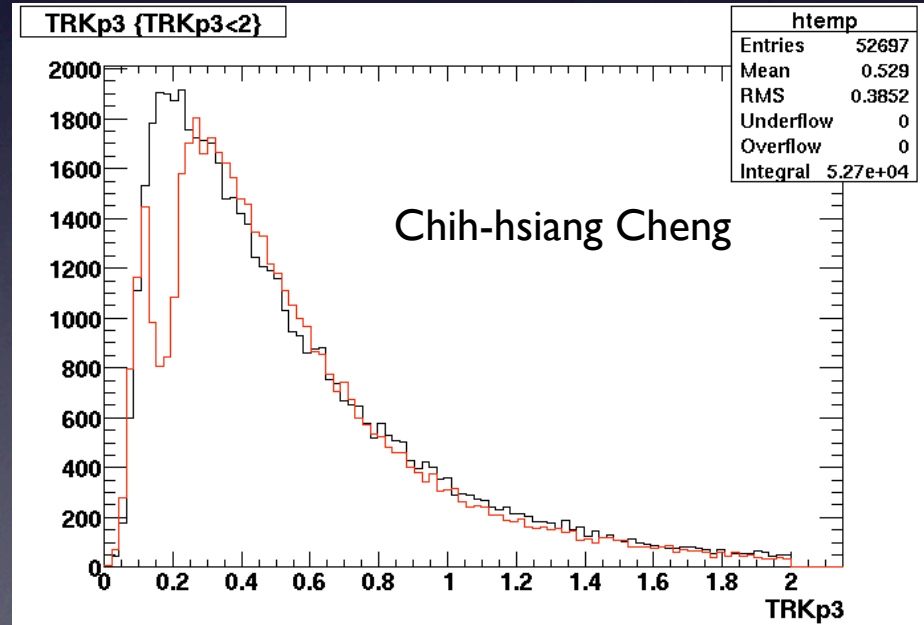
Data mined from logfiles via grep, ...

# Issues

- Analysis code
  - Babar-specific assumptions (PID, Event ID, ...)
  - Complex analysis sequences not well understood
  - warning messages routinely ignored
- Job Submission
  - Worker node upgrade
  - Extending scripts to FastSim case
    - multiple geometries, generators, ...
  - Manual configuration of run #s, geometries, ...
  - Database interaction on submission, not completion
- Output merging done by hand
  - no database reference

# Quality Control

- Analysis preparation
  - output size, filtering, ...
- Inadequate validation of production executable
  - flaw found in tracking



# January Production Prep

- ‘July’ production didn’t really start until September
- Performance and results are far from what we need in January
- Intermediate (November) test production to bridge the gap?



# November Production Goals

- Production run at multiple sites
  - need local volunteers
  - grid submission?
- Validation of executable
  - Formal QA structure
  - need subsystems, analysts to contribute
- Database integration
  - Job status information (fill on completion)
  - user interface for extraction, job planning, job statistics, ...

# November goals (cont)

- Formalized merge step
  - parallel merging of analysis trees
  - removal of originals
  - update database
- 10% of planned January statistics ( $\sim 1 \text{ ab}^{-1}$ )
- Full set of analyses
- Full set of background processes
  - requires FullSim development, production
- ...

# Conclusions

- 2009 Test Production was a success
  - Desired feature set demonstrated
  - many valuable lessons learned
- January 2010 Production goals are ambitious
  - factor ~100 beyond what we achieved in 2009
  - scaling up requires development, **manpower**
- November production could be useful to span the gap