FastSim on OS X 10.6

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Why Mac OS X?

- Linux-like platform
  - gcc, intel
- Supported platform for root, clhep, gfortran, ...
- In common use by FastSim developers, users
- Easy interface to packaging, graphics, web, ...
- Debugging, development and modeling tools
  - xcode, dtrace
- Multi-core support
  - grand central dispatch

Mods for FastSim on OS X

- Code porting started in V0.1.0, 10.4
  - library compilation successful (Chih-hsiang)
  - issues with 64-bit, file system case, root globals
- New effort with V0.2.x, 10.6 (64-bit libraries)
  - Required recompiling root, clhep
  - Fixed file name case-conflicts (probably bugs)
  - Fixed fortran bugs in generators
    - shadowed global functions, ...
  - Added branches in arch_spec_*.mk

Current Status

- V0.2.2 plus Patches_devel

- cold build (no distributed libraries yet)

- All libraries compile without error (except mcfio)

- All apps link without error

- standard tests run

testOneTrack Diff

Diff of output from MacOS (left), Linux (right)
13 lines out of 1005 differ

|	
Real time 0:00:00, CP time 0.040	Real time 0:00:00, CP time 0.030
Creating PacForwardPidMeasurement <	> Creating PacForwardPidMeasurement
Building Cylinder Beampipe 0 at radius 1.3Elements being fetched with BdbTime from Env: Mon Apr	Building Cylinder Beampipe 0 at radius 1.3Elements being fetched with BdbTime from Env: Mon Apr
MatMtrDictionary: Materials being fetched with BdbTime from Env: Mon Apr 12 16:17:08 2010 (local	MatMtrDictionary: Materials being fetched with BdbTime from Env: Mon Apr 12 16:16:50 2010 (local
Building Cylinder dch-He-lbu 152 at radius 26.06WARNING !! - The state conditions of dch-He-lbu	WARNING !! - The state conditions of dch-He-lbu are not consistent with an ideal gas.
	Building Cylinder dch-He-lbu 152 at radius 26.06
SimHit 19: (8.73961,-25.8105,-7.35777) effect normal global len 28.3302 dmom 7.76901e-11 elemen	SimHit 19: (8.73961,-25.8105,-7.35777) effect normal global len 28.3302 dmom 7.76903e-11 elemen
SimHit 87: (29.84,-65.9537,-20.426) effect normal global len 75.5916 dmom 3.82983e-10 element d	SimHit 87: (29.84,-65.9537,-20.426) effect normal global len 75.5916 dmom 3.82984e-10 element d
z-axis poca: s = 0, distance = -0.185374	z-axis poca: s = 1.89613e-15, distance = -0.185374
z-axis poca: s = 0, distance = -0.185374	z-axis poca: s = 1.89613e-15, distance = -0.185374
z-axis poca: s = 0, distance = -0.18811	z-axis poca: s = 7.06459e-17, distance = -0.18811
simulated - reconstructed = 8.74178	simulated - reconstructed = 8.74179

Occasional differences in the last decimal place

PacUserApp (B⁰→π⁺π⁻)
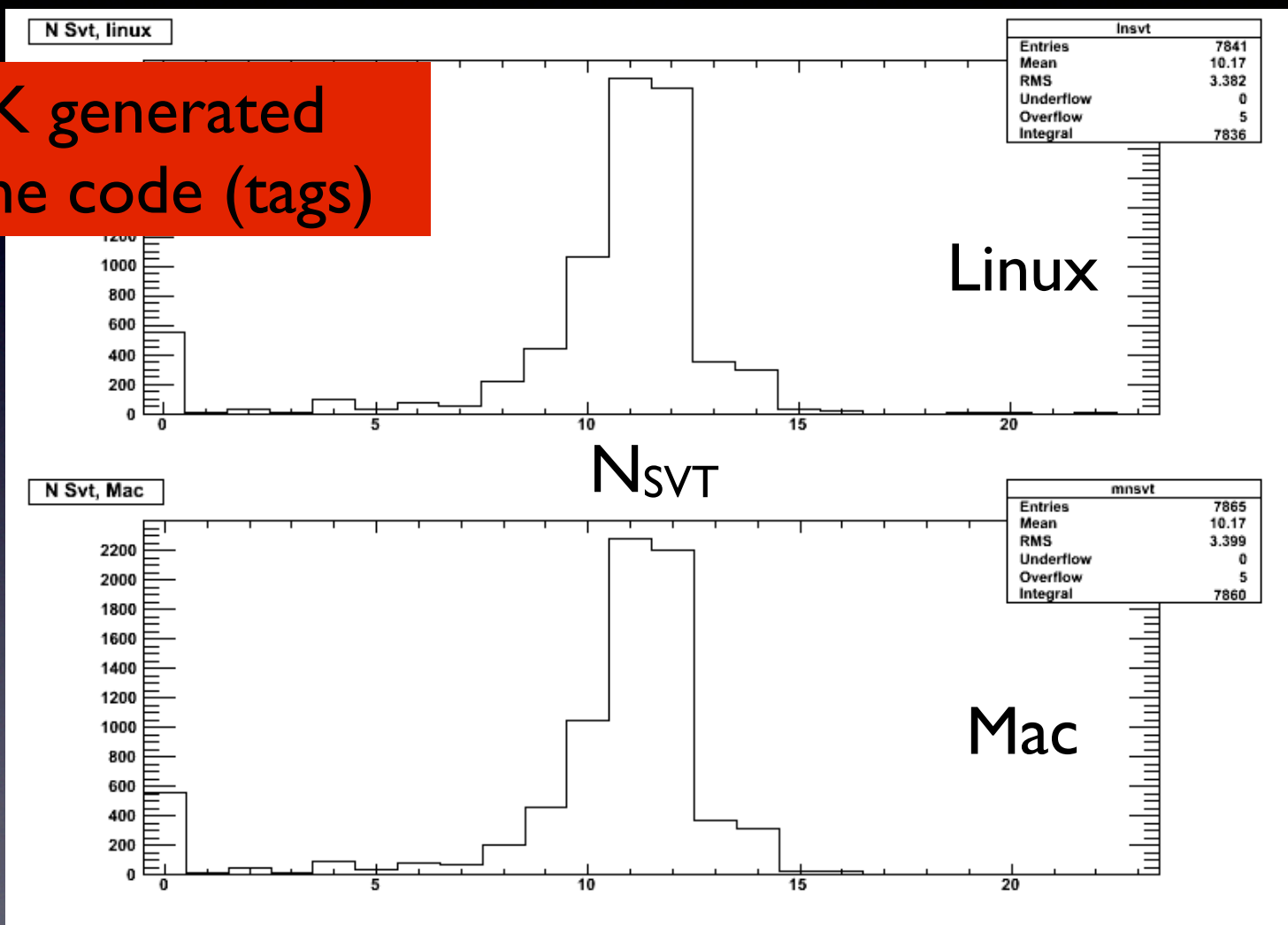
PacUserApp ($B^0 \rightarrow \pi^+\pi^-$)
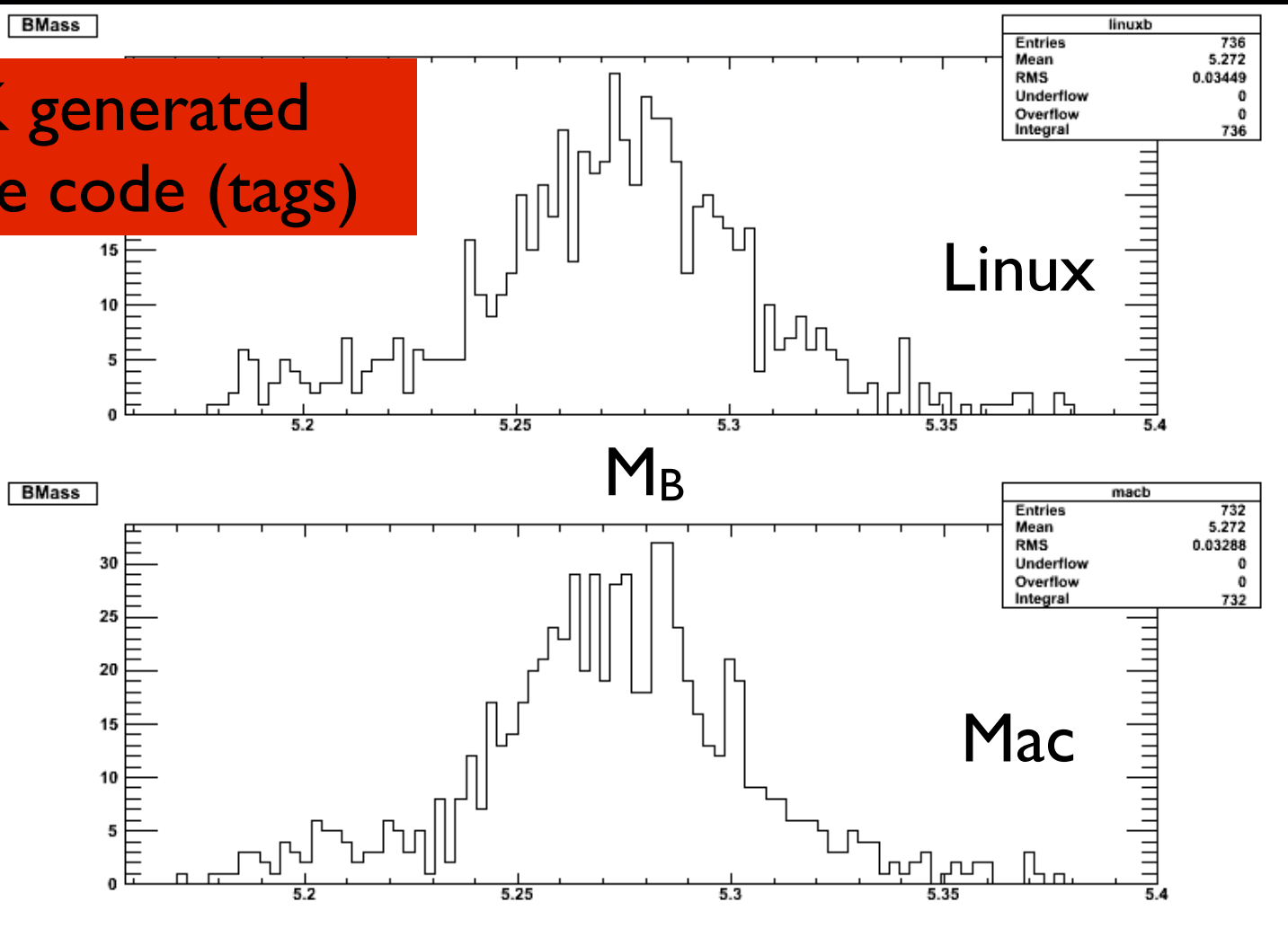
Conclusions

- FastSim is working on Mac OSX (10.6)

- Results are consistent with Linux

  - modulo 64-bit, random numbers in generators

- Already useable for development, debugging

  - command line

- Future access to powerful tools (xcode)

- Interim download for V0.2.2

- (hopefully) fully supported for V0.2.3