

FastSim on OS X 10.6

David Brown

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

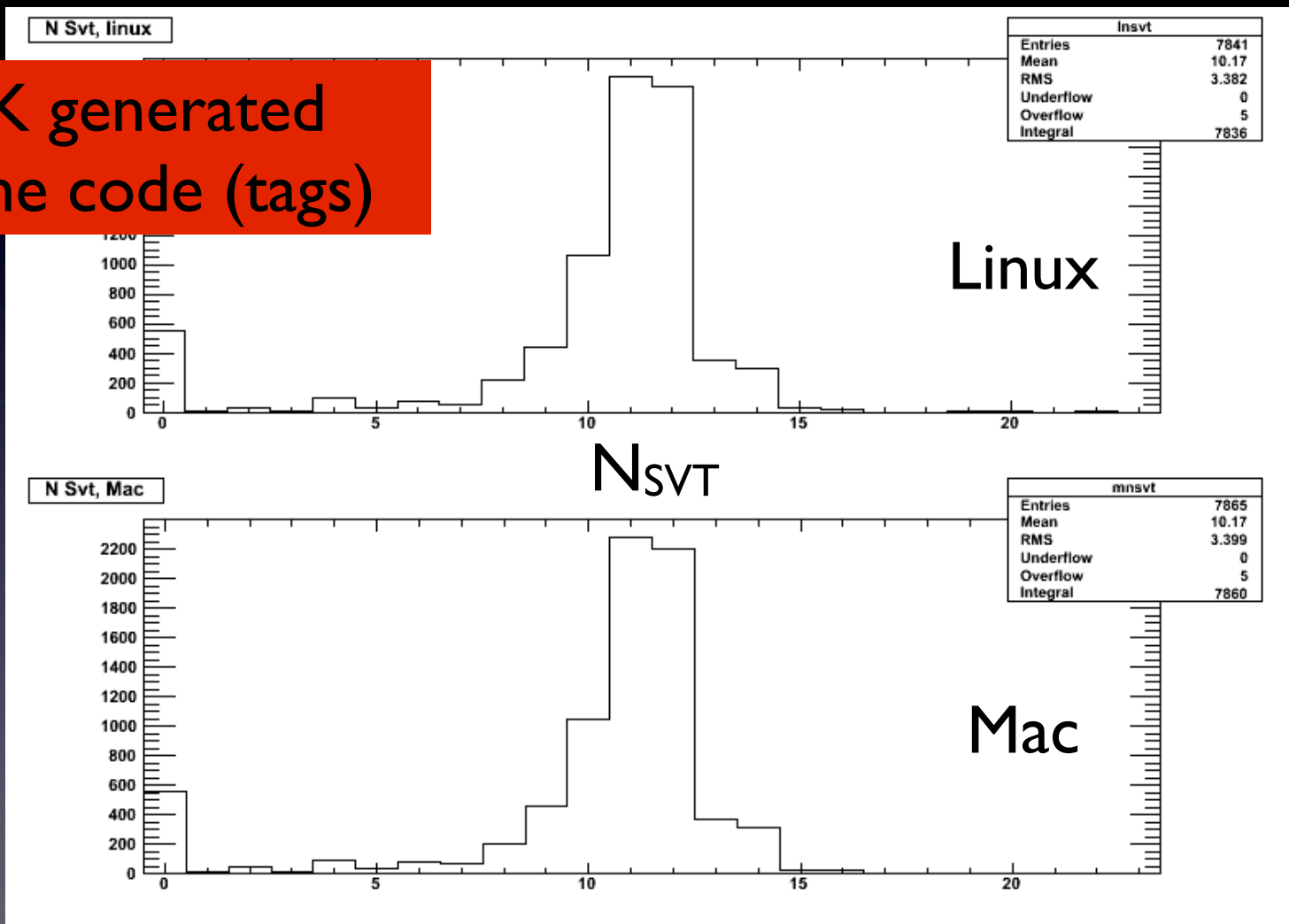
Diff of output from MacOS (left), Linux (right)
13 lines out of 1005 differ

```
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-Ibu 152 at radius 26.06WARNING !! - The state conditions of dch-He-Ibu | WARNING !! - The state conditions of dch-He-Ibu are not consistent with an ideal gas.
| Building Cylinder dch-He-Ibu 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

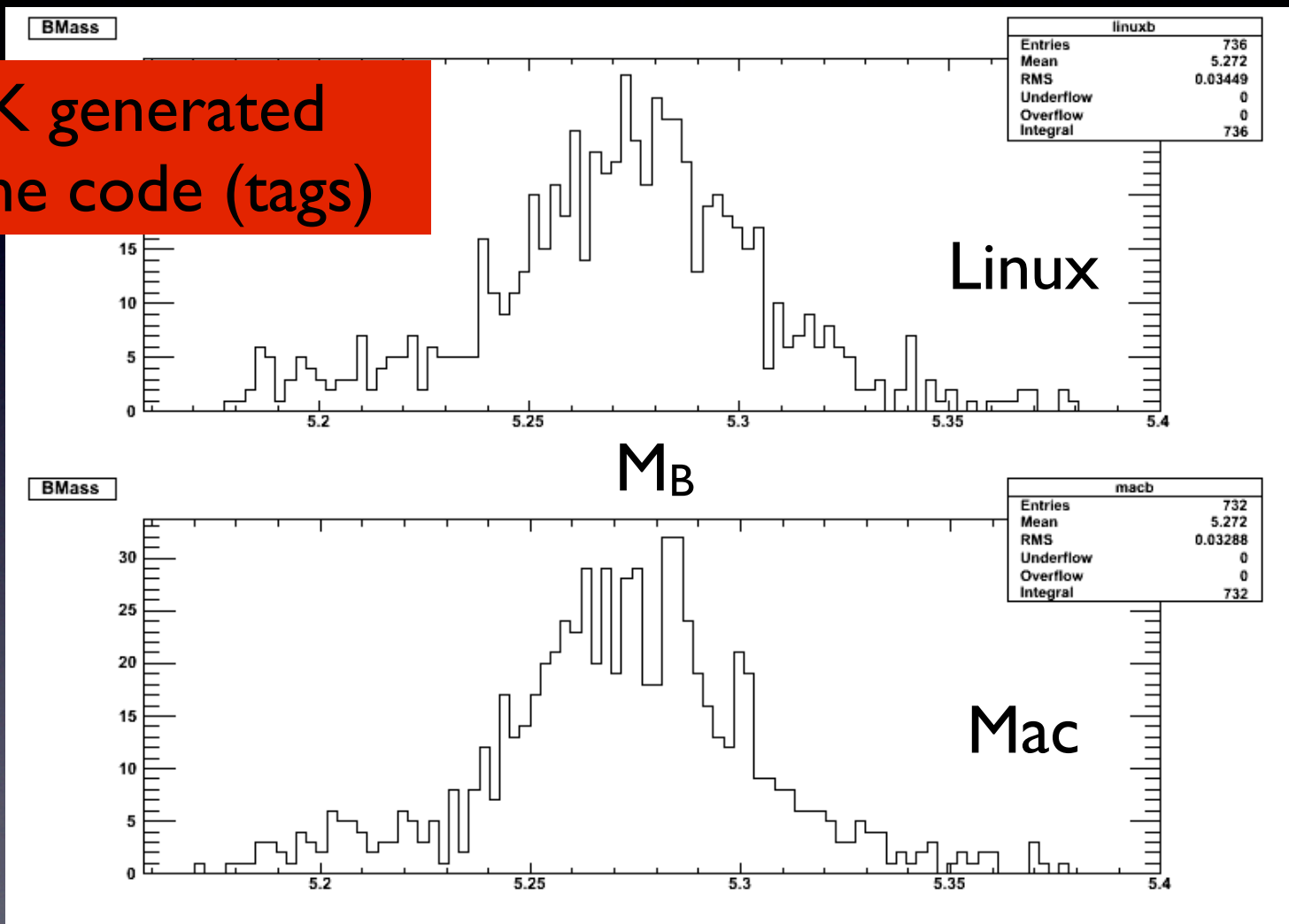
PacUserApp ($B^0 \rightarrow \pi^+\pi^-$)

IK generated
Same code (tags)



PacUserApp ($B^0 \rightarrow \pi^+\pi^-$)

IK generated
Same code (tags)



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
- Future access to powerful tools
 - xcode,instruments
- Unofficial support for V0.2.2
- Can we officially support for V0.2.3?
 - Must resolve external dependencies, distribution model