

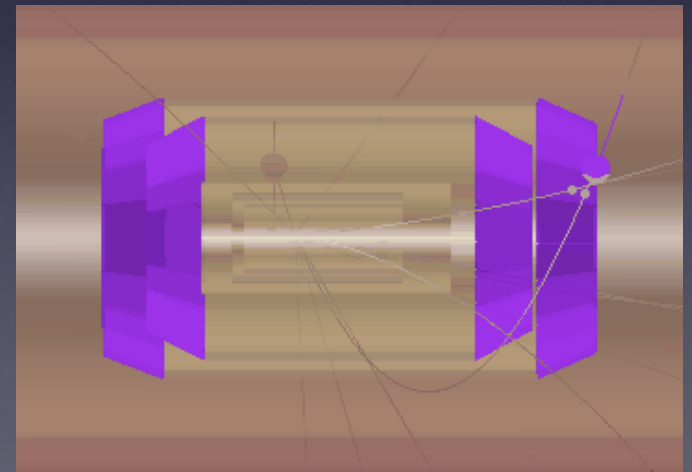
PacTrk Status

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LBNL

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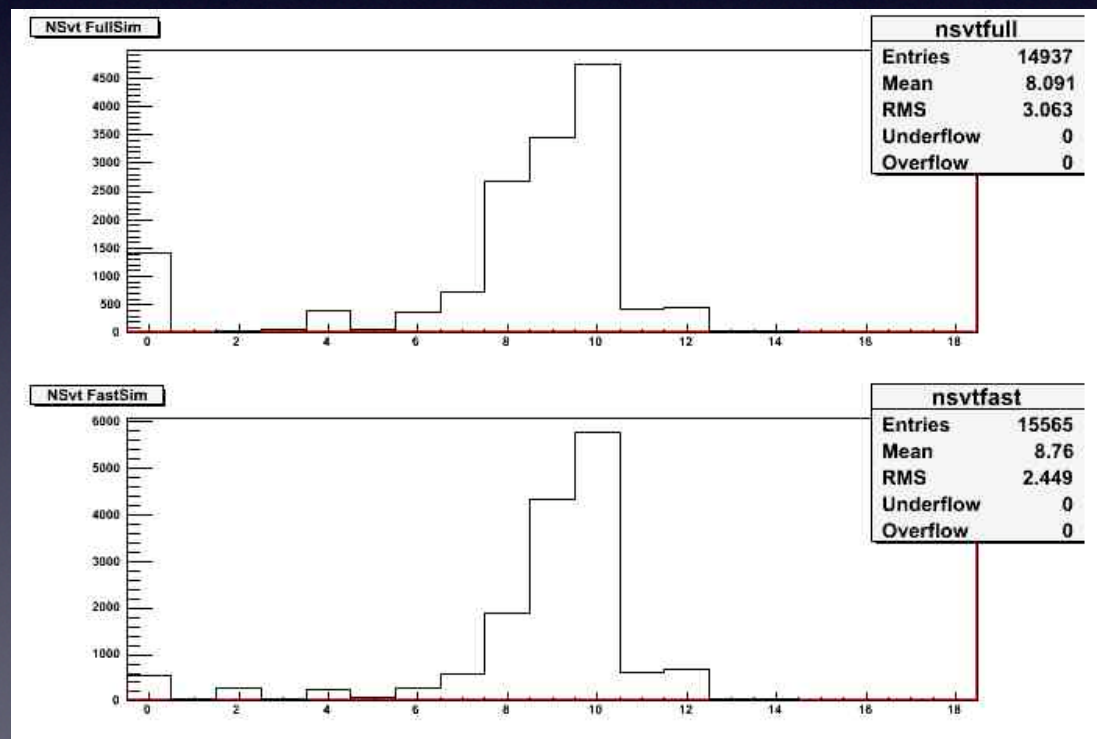
PacConeDetElem

- Implemented as conical ring
 - Described as angle, Zvertex, high and low radius
 - Configuration type 'cone'
- Closed-form line (photon) intersection
- Iterative helix intersection
 - roughly 10 times slower than cylinder intersection
- Already in PacDisplay
 - thanks Aritoki!
- Default in pacrat_BaBar.xml



Overlaps and Gaps

- Now fully implemented
 - Optional EDML attributes 'gap' and 'overlap'
- Can be applied to any element
- Example: Svt



Svt CF support structure

- Implemented as Carbon Fiber elements
 - Cylinders and Cones, as appropriate
 - Just outside Si layers
- Thickness = effective thickness by radial track
- Gap = (1 - fraction) of phi subtended by CF
 - layer 1, thick = 0.1, gap = 0.864
 - layer 2, thick = 0.1, gap = 0.736
 - layer 3, thick = 0.1, gap = 0.778
 - layer 4, thick = 0.3, gap = 0.95
 - layer 5, thick = 0.3, gap = 0.95

New Si Resolution model

- Si res. now depends on track incidence angle
 - functional form motivated by 'head-tail' algorithm
 - affects mostly Z hit resolution
- Si res. includes non-Gaussian tails
- Si res. includes misalignment effects
- Separate models for inner and outer layers
 - different strip pitches, core resolution, misalignment
- **Parameters + model need more tuning**
 - Non-trivial behavior in full simulation

New Svt configurations

- All subtend same solid angle
- Si_lampshades.xml (default)
- Si_longbarrel.xml
- Si_disks.xml
 - Replace lampshades with rings (disks)
- Can switch models by editing pacrat_BaBar.xml
 - comment/uncomment <include> lines
 - More convenient switching under development

Other Changes

- Simplification of EDMML structs (Igor)
 - Now only 1 generic type for all measurements
 - Simplifies adding new measurements
- Event switching in PacDisplay (Aritoki)
- Additional configuration file in PacMC
 - Allows overriding defaults without editing pacrat_BaBar.xml

Under Development

- Tune/refine Si resolution model
 - Compare with full simulation and data
- Improve and extend release scripts (Jeff)
 - needed for full SuperB Release
- SCONS-based build system (Igor)
 - option for first full SuperB release
- Refactoring of PacMC (Gabriele)
 - Simplify code, allow decays, hit confusion, etc

Volunteers?

- Refine Dch resolution model
 - incident angle dependence, drift distance dependence
- Refine Dch material model
 - model wires as metal cylinders with large gaps
 - allows comparing effects of different cell sizes
 - more cells = more material

SuperB.xml

- Important to gain interest among users
- What needs to be done?
 - Implement Si pixel measurement
 - Add machine elements (Drawings by Mike)
 - Help from other subsystems!