UPC Efficiency Simulations (run4)

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Reminder

Status in January 2008

- Publication blocked,
- Bug found in simulations : J/ψ decays angular distribution was incorrect, the efficiency correction had to be re-calculated
- Difficulties to trust last simulations :
  - Difficulties to understand the simulated invariant mass resolution,
    [Last simulations gave much smaller resolution that the first ones, and were incompatible with data.]
  - Suspiction that the vertex was not properly reconstructed.
    [There was that guess that the last simulation considered the simulated vertex instead of the reconstructed one (worsens in UPC), which could explain a reduction the invariant mass resolution.]
- Few simulated continuum statistics

Action item :

- Redo J/ψ and continuum simulations while :
  - take care of the invariant mass resolution,
  - of the correct vertex reconstruction.
  - and beware of the detector description.

Procedure followed

- Start from Joakim's input files and pass them through all the chain.
  - J/ψ input file (50000 evts) : /phenix/gh/data07/nystrand/starlight/starlight_jpsi_xn_v2.out
  - Cotinuum input file (60944 evts) : /phenix/gh/data07/nystrand/starlight/starlight_ee_xn_8m.out

  The chain is : from starlight files (starlight.out) to oscar files (oscar.root), passing them through PISA (PISAEvent.root), and reconstructing them (simDST.root).
- Basic macros located at : /offline/analysis/nana/upc/efficiency_macros/
- Working directories are :
  - for J/ψ : /direct/phenix+hl/zconesa/upc/withpro66.upc/starlight_jpsi
  - for continuum : /direct/phenix+hl/zconesa/upc/withpro66.upc/starlight_continuum_ee
- ★ Using correct upc vertex reconstruction, consistent with data reconstruction.
- Technicities : need to compile/use the code under pro.66.upc with SL3 machines/binaries, but execute it under SL4 in order to acceed the DB.