Concerning bhabhas

- Recap of the problem
- Redo calibration from Oct, 29\textsuperscript{th} 2003 – Run4 (rel. 12 and 18)
- Other comparisons
- Conclusions & Summary
- Other business
Recap of the problem

- E/p_bump in Run4: ~ 0.938 \(<--\>~ 0.94 \) in Run5; same for E/E_exp
- calibrations bounce around Run4 value, never get back to the old value
- after all iterations remains: 0.25% “mystery” in E/p_bump
- several possible sources of the effect, e.g. change of prescaling factor, change in calibration code, change in L3Trigger, etc.
- Try to exclude several guesses with comparisons to Run4 calibrations
redo of old calibration

- used release 18.1.0 (with ambientboot)
redo of old calibration – Release 18
redo of old calibration – Release 18/ Release 12

- significant differences in both, constants map and the hitmap
- changes in computing the constants in release 18?
- use the same data in release 12 (with data12boot):

  reference, release 18

  computed with release 12

  no changes visible, 'diff' on constants files gives nothing
  maybe differences while accumulating vector- and matrixfiles?
redo of old calibration – Release 18/ Release 12

- accumulate with release 12, determine constants with R12 & R18

- some Xtc files missed due to read errors (and out of time)
redo of old calibration – Release 18/ Release 12
compared R18 results with R12: no differences

summary of the comparison:
  - some (~50) channels show significant differences:
    - hits/channel
    - direct hits/channel
    - different calibration constant
  - other bins show no significant differences

no dependence on version of code → no changes in the code

No idea where the differences come from!

maybe choice of db has an influence on this? used ambientboot to accumulate, but had to switch to data12boot when processing...

any comments or hints on this?
overlayed theta distribution of #direct hits/channel in R4 and R5 to see changes in the prescale factor – suggested by Jack

- no significant differences
Conclusions & Summary

- not able to redo a R4 calibration:
  - small, but significant differences in single crystal constants
  - no shift in the mean of the constants visible
  - influence of the db, used for accumulation?
- comparing the prescale factor shows no differences to R4
- Other suggestions and things to check?
concerning offline calibration:
  - rewrite the root script to exclude the channels 1-3 from the statistics, e.g. mean of constants, constants vs. theta & phi, distributions vs. theta/phi
  - comments on that?

concerning rolling calibration:
  - opr-expert (Niels): just need a release with code to be tested and then make a request in OprSOS HN
  - will check out a new release and include the recent code
  - will coordinate with Wolfgang to use the skimmed bhabha sample
  - comments/suggestions?