

Status of Muon CTB 2004 Simulation

- *Geometry*
 - *recursive test*
 - *test on new versions of the database (amdb_simrec)*
- *Hits*
- *Digits*

Athena release 8.0.1

Simulation package:

Simulation/G4Sim/CTB_G4Sim/CTB_G4Sim-00-01-01

Muon TB package:

MuonSpectrometer/MuonG4/

./MuonG4TestBeam/MuonG4TestBeam-00-00-23

Database: amdb file

amdb_simrec.H8_2004_CTB.a.01

amdb_simrec.H8_2004_CTB.a.02.test

Geometry: recursive test

- **MDT- EndCap**
 - spacer outside the chamber volume (few microns)
 - SOLUTION:** implementation of spacer like crossplates and longbeams
 - STATUS:** under development
 - some tubes outside the Multilayer volume (< 1 mm)
 - SOLUTION:** enlargement of the chamber envelopes
 - STATUS:** implemented, under debugging
- **RPC**
 - **solidProblem:** spurious intersection point in *RpcGasVolume* and in *RpclayerStripsupport*
 - overlap between some volumes
 - STATUS:** ADS informed
- **CSC**
 - *CscArCO2* volume outside the station volume (\sim mm)
 - STATUS:** KA informed
- **TGC**
 - *Tgc wire support* outside gas volume (2.5 cm)
 - STATUS:** YH informed

Geometry: toward amdb_simrec.H8_2004_CTB.a.02

Some amdb_simrec test files have been developed by Daniel (see DP talk) and tested by simulation

- *amdb_simrec.H8_2004_CTB.a.02.test5*
 - *rotation angle for the chamber no more in "A" lines (reserved to alignment) but in "P" lines by filling the Alfa, Beta, Gamma rotation angles properly*
 - *MDT thickness correctly defined everywhere (real pitch 30.035 mm)*

STATUS:

- *angle reading and rotation application implemented successfully*
- *methods for reading alignment parameters in place (from previous implementation) for further use*

- *amdb_simrec.H8_2004_CTB.a.02.test6*
 - *added chamber BEE (BIS) in front of calorimeter: new mother volume?*
- STATUS:*
- *possible strategy for solution identified*

Conclusions

- *recursive test: errors identified and solution under control & implementation*
- *reading amdb_simrec.H8_2004_CTB.a.02 implemented (mods committed after the database release)*
 - *dz correction for MDT*
 - *angles in "P" lines (positioner)*
 - *Spacers implemented as CrossPlates and LongBeams for all technologies*
 - *BEE/BIS chamber included upstream the calorimeter*
- *Hits generation ok for all the technologies (MDT, RPC, CSC, TGC)*
- *Digitization in CTB (hit generated, read back and digitized)*
 - *MDT OK*
 - *Still some problems with other technologies*
 - *instructions for running digitization with 8.0.1 on a web page*