

An AMS-02 Lvl3 DB ???

...some ideas...

21st, January, 2004

CERN

(M. Boschini, E. Micelotta)

...goal...

- Would it be useful to have a DB that makes event selection easier ?
- ...something like RunInfo in AMS-01 ?
- If so, what can be done ?
- I present what came to my mind, but I'd gladly hear from you all...

...first (naïve) idea...

- Unpack Lvl3-Trig bitmask(0-17) and store in DB.
- Optimized data extraction from MC root trees: ~ **800 ev/sec**
- Optimized DB insert: **10000 ev/sec**

...we could thus *technically* be able to do it but...

...data sample...

- Rec. event rate: **200 ev/sec**
- Total events in 3 yy of DAQ ~ **2x10E10**
- An event-per-event DB will thus have ~ **2x10E10** entries...
- ...this would mean a DB >> greatest "known" DB (British Telecom, 2x10E9).
- Even 1 month of DAQ may be too much: 0.5x10E9 entries in DB...

...second approach...

- ...just give a "summary" of how many events per ROOT-tree (run better...) have a certain Lvl3-trig...
- This reduces DB size of a factor ~ 10 .
- ...still to big/heavy...?

...third approach...

- ...just give a **"summary"** of a **RUN** in terms of **particle/nuclei/etc** selected with "common and agreed-upon" criteria...
- Which could these criteria be ?
- Could it be useful ?
- This reduces DB size of a factor $\geq 10E3$ (num events per run...)

Test

- We tested all 3 approaches on some MC ROOT trees.
- DB insert time not a problem.
- particle processing ~ 800 events/sec in all approaches.
- DB size much better in terms of usability in case of RUN particle summary (*as for now only Charge, Mass and Momentum used for selection...*).
- You can find Web Browser at <http://pcams06.mib.infn.it/Lvl3/>