



Integration of 5.1: week of Sep 03 2003



- **Bug fixes from the last week:**
 - COT tracking code not finding the data: fixed (Aseet, Chris)
 - Backward compatibility of the Calor code: fixed (Beate)
 - Initialization issue in the PES clustering code (valgrind) - fixed (JohnPaul and Martin)
 - **Skimming - begin run records**
 - validation of CES compression: initialization issue in the validation code
- **Tests:**
 - 100K test with 5.1.0pre7: 6 crashes in total, all - nonreproducible, all - compression (Aseet)
 - Initial test of the BeamExe - successful
 - 10K test of the optimized executable was successfull, 100K test requested
- **Known issues:**
 - Muons pointing to the missing CHA towers (never CEM)
 - 5.1 finds significantly more stubless muons with exactly 0 energies
- **Calibrations:**
 - Need Pass 11 :Offline LER's for the latest runs, TOF (Larry - no changes up to run 163800)
 - **any changes in the code? - Calib.cc**
- **Proposed plan for the week:**
 - Have a statement from the muon group,
 - Made Pass 11 used set
 - Build pre8, proceed with the processing of the physics samples with non-opt exec, physics validation: **2 weeks**
 - Have fix for the standalone Si tracking
 - have fix from Aseet -> pre9->100K opt
 - Validate
 - Start reprocessing on the Farm with opt exec



Valgrind complaints



- CalibrationManager::beginRun - uninitialized variable
- **PlugStripMaker::doDeadChannels - uninitialized variable (fixed)**
- ChipStatus::__ct - uninitialized variable - Jason working on it
- PadRawModule<PadSqz::CALQ> - PadSqz::Huffman_T: invalid read of size 2
- PadRawModule<PadSqz::SMXQ> - PadSqz::Huffman_T: invalid read of size 2
- PadSqz::COTQ::Streamer: invalid read of size 4
- PadSqz::SVXQ::Streamer : invalid read of size 4
- ROOT compression - uninitialized (and unused) members of the data structures
- **Need to fix everything except ROOT for pre8**



Validation: 5.1.0pre6 maxopt vs minopt



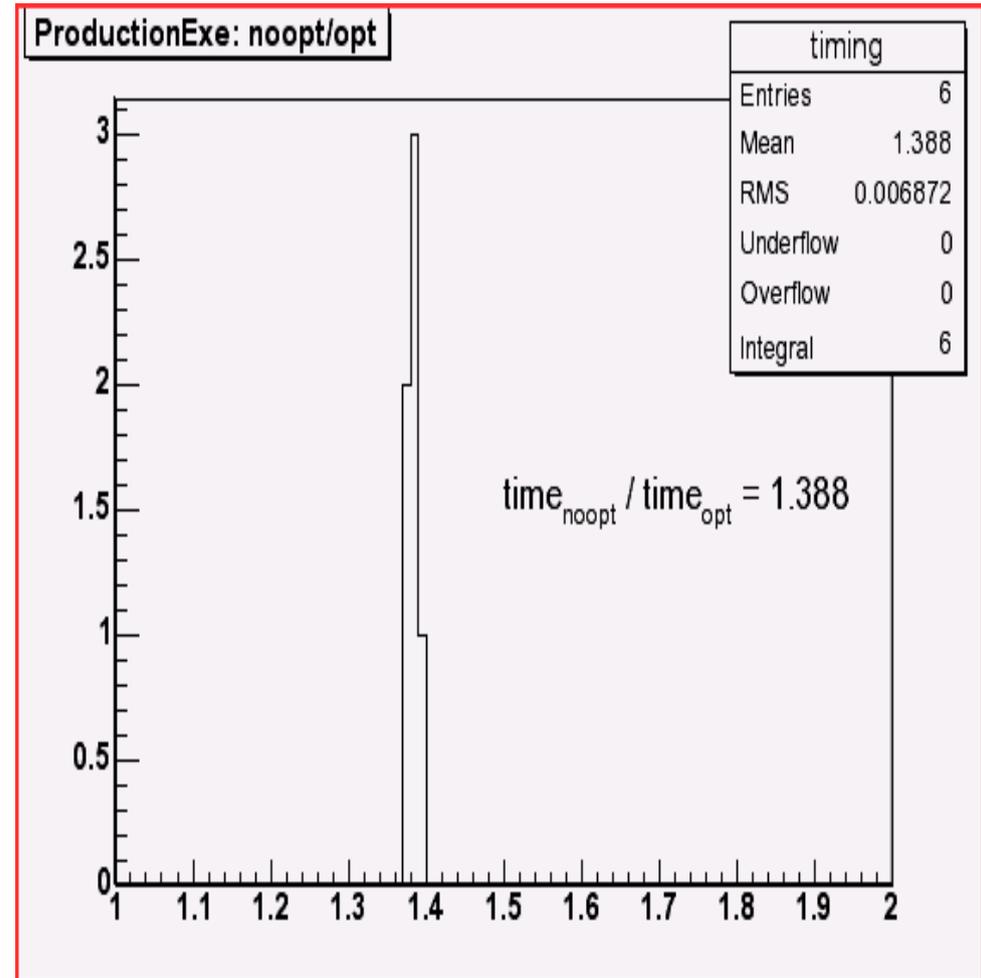
The screenshot displays a ROOT Object Browser window and an Emacs editor window. The ROOT Object Browser window is titled "ROOT Object Browser" and shows a file tree structure. The left pane, "All Folders", shows a hierarchy starting with "root", containing "STNTUPLE_RESULTS" and a sub-directory "_cdf_scratch_cdfopr". The right pane, "Contents of '/ROOT Files//cdf/scrat...", lists various analysis modules such as CalAna, CesAna, ClusterAna, ConversionFilter, EmFilter, FwdDetAna, JetAna, JpsiMon, McAna, MetAna, MuoAna, PesAna, PhotonAna, Run2InputModule, SvtAna, TrackAna, TrigAna, and WenuMon. A second, smaller ROOT Object Browser window is overlaid on the main one, showing the contents of "/root/STNTUPLE_RE...", which includes ConversionFilter, JetAna, and TrackAna. The Emacs editor window in the background shows the file path "emacs@murat01.dhcp.fnal.gov <2>" and a terminal output with histogram names like "hist:mumu_mass_1", "hist:mumu_mass_cot1", and "hist:mumu mass cot1".



10K test of optimized ProductionExe



- 5.1.0pre6 maxopt with patches
- Ran 6 jobs, all finished successfully
- Validation:
 - **Most of the results identical**
 - Minor differences in the tracking:
 - **Standalone Si patrec does not find certain tracks**
- Timing: improvement by a factor of ~1.4 wrt minopt executable
- optimized tarball built, 100K test requested

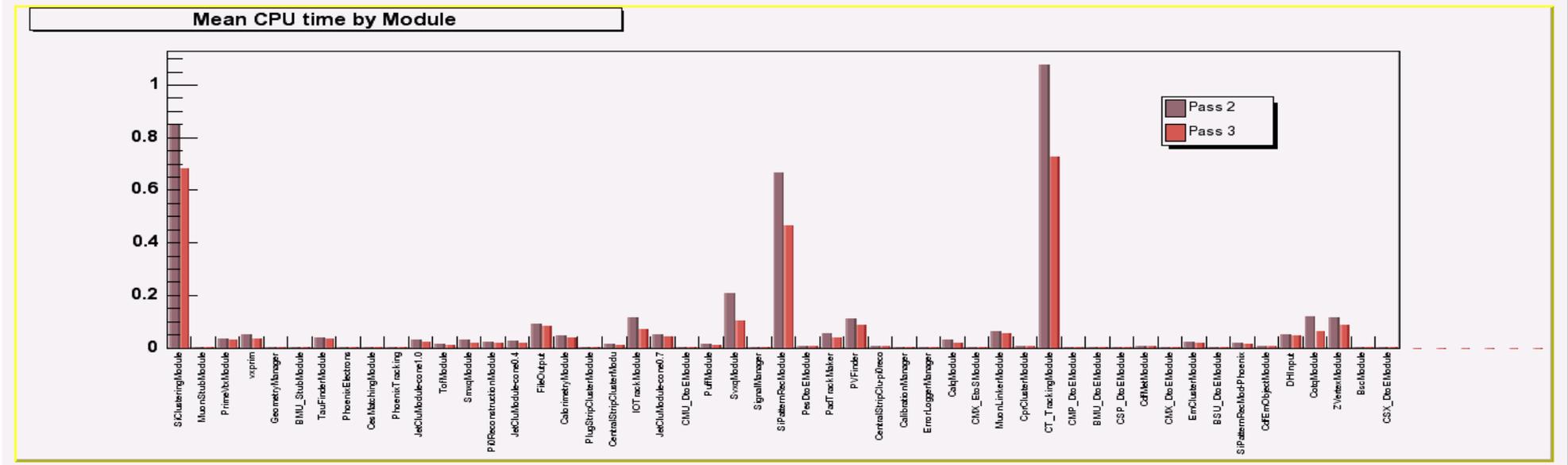
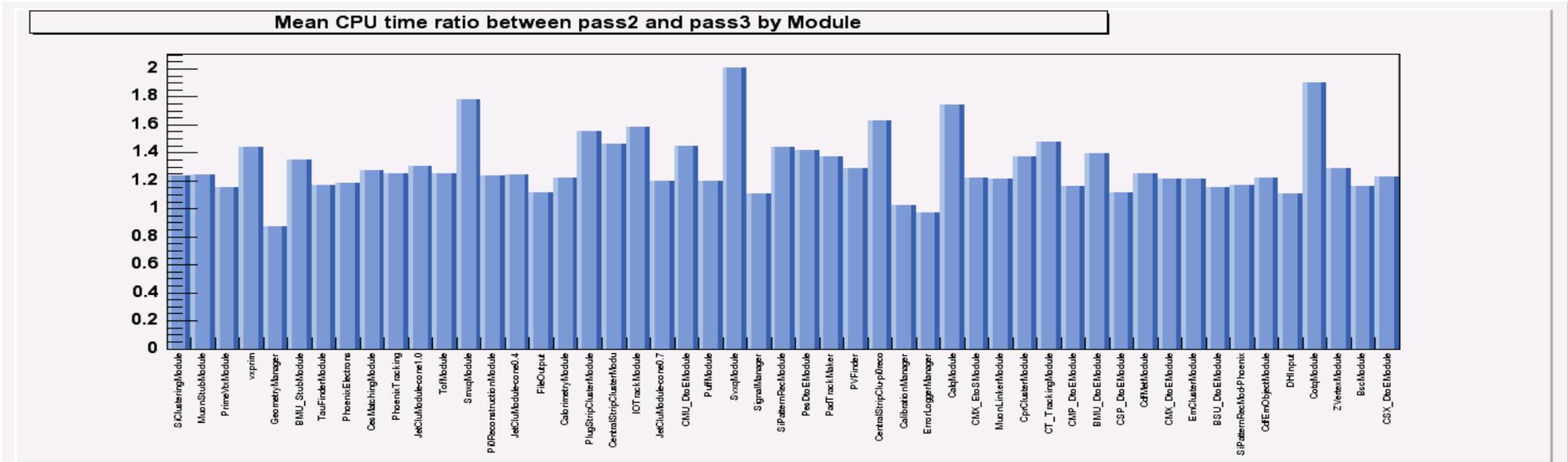




Timing for different modules



- Plot by JohnPaul:

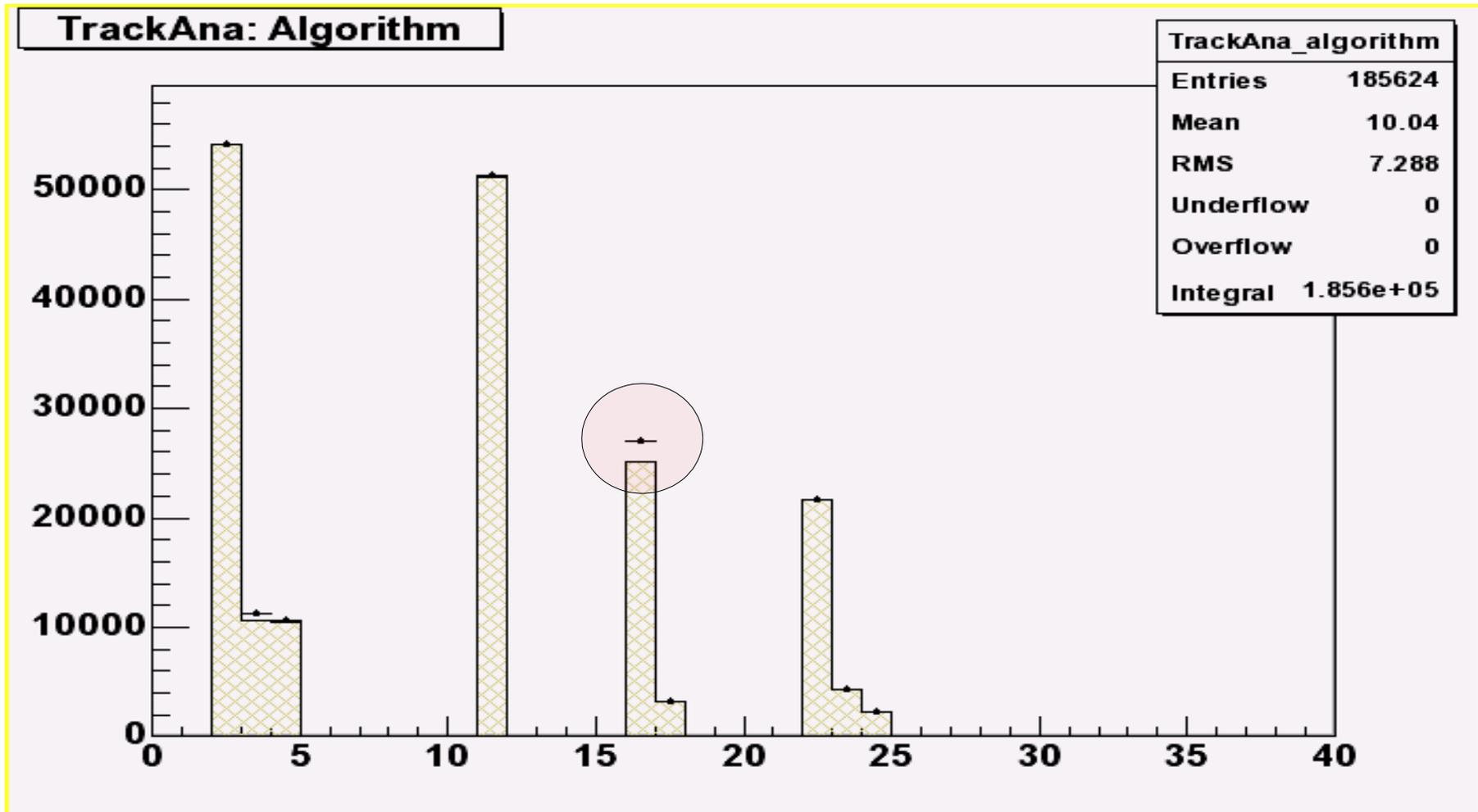




5.1.0pre6: opt vs noopt Tracking



- Numerically: track parameters are almost the same, most differences in χ^2 's
- Very few histograms are different, all differences can be attributed to the tracking:
 - **Some standalone tracks found by non-optimized code were not found by the optimized**





5.1.0pre6 vs 4.11.1: Muons



- Muons crossing NULL towers (always CHA)
- CMIO muons with exactly 0 energies - significantly more in 5.1.0 than in 4.11.1

