Status of LHC & CMS

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June 2   FNAL All Experimenter's Meeting
LHC Status

End of April Status

As of Friday...

Goal is for everything to be this color by end of June!
Overall LHC Schedule:

- Goal to have all sectors cold by end of June
- Then all sectors power tested at 5 TeV by end of July, followed by beam injection and circulation several weeks
- Then “hours” of collisions @ 900 GeV, moving to 10 TeV collisions by end of September
- Shutdown ~November '08 - Spring '09
- Then ~6 month “14 TeV” physics run through end of 2009
  - Expected to provide ~few fb$^{-1}$
CMS Commissioning News

- Tracker had 2\textsuperscript{nd} heat exchanger failure on May 7.
  - For now, replacing heat exchangers, chiller compressors.
  - Recommissioning ~June 15
  - Joining global runs early July
  - Meanwhile final fix to be implemented during '08-9 shutdown

- Beam pipe now installed
  - Bake-out starts June 9
  - Goal to finish by June 16-20

- End of June/early July: Pixel installation & Ecal endcap (+) cabling

- CMS to close near end of July
CMS General News

• 3 efforts completed in the past month:
  – Cosmic Run at Zero Tesla (I) Global run
    • May 5-9, 65% of detector, 24/7 continuous running!
  – Two Computing challenges run in concert throughout the month of May:
    • Combined Computing Readiness Challenge (CCRC): dress rehearsal of computing coincident with other experiments
    • Computing, Software & Analysis 08: dress rehearsal of T0+Calibration workflows
  • Both finished today!
CRUZET I Highlights

- Goal to establish continuous 24/7 running
  - Achieved! Including shifts at the FNAL ROC!
  - >30 million cosmic muon triggers taken
  - Prompt reco at T0 in ~hour
  - Data Quality Monitoring
  - >65% of CMS detector included in test (no tracker yet)
  - CMS event display showing cosmic muon coincidence in muon chambers, Hcal, & Ecal:
CSA08/CCRC

• Two computing challenges run in concert
• CSA08 simulated prompt reco + calibration workflows with startup – like MC samples
  – Prompt reco at CERN, followed by extraction of calibrations at the CERN “CAF”
  – MC samples then transferred to all 7 Tier 1's for custodial storage, then re-reconstructed.
• CCRC exercised system alongside load from other experiments
  – Extended CSA08 challenge to Tier 2 level
Data Transfers for multiple VO's

CMS MC Events Processed during CCRC & CSA08

D. Mason, June 2 FNAL All Experimenter's Meeting
Slide 8
What to expect next...

- Another global run: CRUZET II from June 11-14
  - Including 24/7 operations – see us in the ROC!
- CRUZET III, with tracker, planned for early July
- Then CMS close, magnet tests
- Cosmic Run at Four Tesla, end of July/August
  - Full rehearsal for running with collisions
- 900 GeV, then 10 TeV collisions in September!
Soon we may be able to see:

- Plotted at right -- inclusive jet rate in 50 GeV bins for integrated luminosity of $10\text{pb}^{-1}$
  - QCD measurement that is sensitive to new physics
- Shaded area is a 10% estimated jet energy scale uncertainty at startup
  - Expected to be dominant uncertainty
- Contact interaction discovery potential above Tevatron limits