

# MC10 production, issues and plans

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# G4 simulation status

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- Grid performance for G4:
  - the MC10 G4 campaign with GEO-16-00-00 and AtlasProduction 15.6.12.9 (re-)started on 16<sup>th</sup> of September.
    - ~2700 samples, 560M events + 170M single particles.
    - Single particles are done
    - ‘regular’ events: 480M/560M (85%) done.
  - In parallel new MC09 requests (to finish notes, papers etc.): 80M
    - This averages together with MC10 to **7.5M events/day**.
    - Expected order 10M/day with the current resources.
  - Evidently the user and group analysis has a substantial presence at Tier-2s, a new reality we have to deal with.
    - Would be nevertheless good to check the shares at sites.
  - The G4 setup itself is stable, failure rate well below 0.1% level - but not zero; some particular cases of crashes communicated to the Simulation group.
  - Included CERN as a production site to improve on the performance (and use unused resources): running without problems, still with manual submission.

# MC10 Digitization and Reconstruction

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- We started MC10 (Autumn) digitization and reconstruction campaign with priority one and two samples on 4<sup>th</sup> of November:
- with three different pile-up configurations:
  - ‘vanilla’ (no-pileup) for 10% statistics of all samples apart from special requests.
    - **99% done:** some new requests waiting for G4 to finish.
  - ‘in-time only,  $\mu=2$  bs=900 ns’ (MC09) pile-up for 20% statistics (submitted on the 20<sup>th</sup> of Nov).
    - **95% done:** some new requests waiting for G4 to finish.
  - ‘bunch train setup’ with full (100%) statistics (submitted on the 30<sup>th</sup> of Nov) . The details of bunch train setup are:
    - double trains with 9BC separation
    - within trains: 8 filled bunches with 150ns bunch separation and  $\mu=2.2$  (thanks to Beate Heinemann and John Chapman)
- Basically three times the work compared to May MC09 production, in total order **9k tasks (!)** times 2 counting also AOD merging.
- Evidently delays in pile-up debugging and validation, nevertheless compare that we needed > 2 months in (May) MC09 to get a fully validated pileup setup.
  - This does not mean it could not go smoother..
- For the first time large scale data reprocessing and MC production running in parallel:
  - I believe quite some strain on the system and people..

# 'Special' Productions

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- Quite some special studies/requests running in parallel:
  - Most notably the urgent Heavy Ion samples were requested 10 days ago:
    - Quite some issues with correct job setup.
    - Many thanks to ADC (especially to Pavel) and sites for handling these.
    - There is more accurate G4 running now (prio > 800) in case you are wondering what this is..
  - Some feedback from the Heavy Ion requesters/'users' on issues:
    - Analysis releases not completely distributed to analysis sites (e.g. 16.3.0 to FZK)
    - gcc install problematic (e.g. MWT2)
    - AtlasSetup problem causing installed python files to be missing on the Grid (everywhere)
    - Sites with production queues online but analysis queues ~offline make getting at data very difficult (e.g. RAL)
- Also new GEO-17 validation in progress, extra material studies etc..

# MC Production Plans

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- We need to be ready for new LHC energies in 2011, plans (in the making):
  - Run G4 simulation of a set of **8 TeV** samples with MC10 setup over Christmas (should also keep the grid full).
  - Next year start a new MC11 G4 campaign once the energy is known:
    - Updates to event generation ( tunes, PDFs, energy) : re-run everything
    - Updates to G4: New geometry (?) and conditions.
  - Then reconstruct these in the next MC and Data reprocessing campaign..
- Bottom line, we will keep busy..
- Many thanks to everyone for the efforts invested so far, however, apparently this is only the beginning..