

Computing Review Prep Meeting Notes: Reconstruction

November 16, 2021

Present: Justin, Matt, David, Mark I., Igal, Alex A.

There is a [recording on the BlueJeans site](#).

Note: names in parentheses indicate writing/compilation assignments.

- Mark ran through introductory and stage-setting stuff
 - The web page
 - The Google Drive directory
 - Graham's slides
 - The Indico agenda
 - The outline
- We went through the outline. Items in quotes below refer to items in the outline.
- On the "Usage history since the last review" item
 - A comprehensive table with something like the suggested columns is a worthy goal.
 - run period
 - dates of processing
 - number of events at each site
 - CPU used at each site in millions of core-hours (MCH)
 - number of jobs
 - How should we fill the table? Mine the sites! We also assigned some responsibilities.
 - NERSC has nice graphics (David, Igal)
 - Pittsburgh (David, Igal)
 - IU (Matt)
 - JLab SciComp has plots (Alex)
 - Igal's job-tracking spreadsheet (Igal)
 - We need to produce a prototype table and have people fill in the items.
- On the "Enhancement to work on multiple files in on a single node to get better throughput" item
 - NERSC scheduler changed this past year
 - Now: one job per run, using one node per file, where a typical run is 200 files.
 - Before: one file per job with each job on a single node, 1 node per job
 - Now and before: one file handled on a single node with multi-threaded execution to keep the entire node busy
 - Before: more cracks to fit into, cracks not as abundant with new scheduler
- David reported on Rolf's remarks at the Senior Staff Meeting
 - opportunity for JLab to introspect
 - make sure that there are no missed opportunities
 - Outside reviewers
 - Rolf and Amber called for the review[?]

- Dec. 6, early in week, meeting to review the slides
 - all Halls, SRO, heterogeneous, AI/ML
 - Not a dry run, show the slides and comment
 - Thia may run the review
- David on new HPC opportunities
 - we can apply for Perlmutter now
 - Cori II ran Xeon Phi nodes
 - Haswell time was expensive in terms of allocation
 - Matt: new IU machine same as Perlmutter
 - For review should mention plans for new P-type IU and NERSC facilities
- On the “Future Computing Needs” item
 - We made a list of run periods:
 - PrimEx
 - SRC
 - Rest of GlueX II + JEF
 - CPP
 - KLF (small rate, outside of 5 years, just mention)
 - How to make the estimates
 - David and Mark will fire up the computing model
 - Matt: model need documentation (find the document)
 - Look at previous reviews
- AI/ML (new section)
 - IU shower shape
 - Experimental controls predicting cdc constants from epics data
 - Sergey: FPGAs
 - 4 GPU node in counting room
 - Hydra
 - CPP and BH pair ID
 - Daniel Lersch: PID with AI
- GPU resources for amplitude analysis (new section)
 - high memory GPUs, 80 GB/card in new NVidias
 - Statistics, bin size, go into structure of fit, more resources allow more ambitious approaches
 - Justin and Amy saturating current JLab GPU set-up with amplitude analysis of omega pi reaction
 - Fits in bins, 40 GPU cards at a time, fill up cards, and wait, more resources would help
 - Scicomp has plots/statistics?
- Action items
 - Fire up computing model
 - Make a prototype “The Table”
 - Make specific assignments for filling in the table
 - Make a placeholder in document for GPU + slide to go with it