HPS-MC: www.github.com/JeffersonLab/hps-mc

Pre-requisites, Installation and Environments

See
~tvm/hps/scratch/setup.sh
~tvm/hps/scratch/slic-env.sh
~tvm/hps/hps-mc/install/bin/hps-mc-env.sh

Production jobs are under /nfs/slac/g/hps3/mc/prod/jobs

/ap_1pt05_40
Generate 40 MeV A' events using MadGraph5 and save 'lhe' file.
/ap-slic
Read 'lhe' file, run slic and save 'slcio' file.
/ap-recon
Read slic output 'slcio' file, do readout/recon and save only triggered events.
/egs5-beam-v6_1pt05
Generate beam background using EGS5.
/tritrig_1pt05
Generate trident events using MadGraph5 and save 'lhe' file.
/tritrig-slic
Read 'lhe' file, run slic and save 'slcio' file.
/tritrig-recon
Read slic output 'slcio' file, do readout/recon and save only triggered events.
/wab_1pt05
Generate wabs using MadGraph4 and save 'lhe' file.
/wab-beam_1pt05_v7
wab is overlaid on the beam background, and run slic.
/tritrig-wab-beam_1pt05_v7
tritrig is overlaid on wab-beam, run slic, and do readout/recon.
/wab-beam-tri_1pt05
wab and tritrig are overlaid on the beam background.

run_params
hps-mc/data/run_params.json

detector
hps-mc/install/share/detectors

Example tritrig-slic

job.json
specify run_params
beam size
target z
detector
run number for MC is always 5772
input file
output file

tritrig_job.py
job sequence

hps-mc-workflow -j 0 -n 10000 -w tritrig -r 21 tritrig_job.py job.json
    Generate tritrig.json file for 10,000 jobs with random seed starting from 21.
hps-mc-bsub tritrig.json -W 1 -q short -l $PWD/logs
    Submit batch jobs with batch option "-W 1 -q short" and save log file in 'logs'.
hps-mc-bsub tritrig.json -t 180 -n 200
    Submit 200 jobs and wait for 180 seconds

Batch job failures and incomplete jobs
Check # output files
Check the output file size by 'ls -lS' and delete short files.

hps-mc-bsub tritrig.json —check-output
    Re-submit those jobs with missing output.

MadGraph4 fails to generate enough events.
    If # events < 0.8*request, the job is killed. Re-submit job with different random#.
Job fails during readout/recon step.
    Try re-submit job with different random#.

Logs
Many large log files are generated and the /nfs/slac/g/hps3 disk can be full. Delete files.

Directories
/nfs/slac/g/hps3/data/mc_production
/nfs/slac/g/hps_data2/mc_production

Production job should be submitted by 'hpsprod' from the production directory.
To login as 'hpsprod'
    kinit
    ssh hpsprod@rhel6-64
    newgrp hps