



CLAS12 – Pre-Release Coatjava 4a.7.5 & GEMC 4a.2.0 August 09, 2017

CLAS12 Pre-Release: Coatjava 4a.7.5 - GEMC 4a.2.0

• GEMC 4a.2.0

- The GEMC simulations includes all detectors and beam line components except:
 - FMT
 - LTCC BOX
 - Details of the moller shield from CAD model
 - DC RII & RIII bracket support
- The latest development of the DC Time to Distance in GEMC (but no B filed dependence at this stage)
- *Note: there is an overlap between CND and CTOF*

• Coatjava 4a.7.5 includes:

- The CVT (3MM + 3SVT) tracking (*Does not take into account the detailed material budget in the BMM in the tracking*)
- The latest improvement to the DC tracking
- No CND reconstruction service
- No tracking service in the FT MM
- The first version of the event builder PID
- *Note: No FMT tracking yet*

Instruction to run GEMC and ClaRA on the Farm

- working assumption : a generator for the reaction to be simulated has produced LUND format file lundFile.dat
- download the gcard file clas12.gcard from [/group/clas12/gemc/4a.2.0/clas12.gcard](#)
- login into ifarm and cd into your working directory
 - place both the clas12.gcard and lundFile.dat files into this directory
 - edit the clas12.gcard with the correct scaling factors for the torus and solenoid magnets
 <!-- you can scale the fields here. Remember torus -1 means e- INBENDING -->
 <option name="SCALE_FIELD" value="clas12-torus-big, -1"/>
 <option name="SCALE_FIELD" value="clas12-solenoid, 1"/>
 - to process e.g. 1000 events from the lund file into gemc, run the following commands :

> source /group/clas12/gemc/environment.csh 4a.2.0
> gemc clas12.gcard -INPUT_GEN_FILE="LUND, lundFile.dat" -OUTPUT="evio, sim.evio" **-RUNNO=11** -USE_GUI=0 -N=1000

- at this point we have the gemc output file sim.evio which is then processed through reconstructions as per the following instructions

wget --no-check-certificate <https://claraweb.jlab.org/clara/downloads/install-claracre-clas.sh>
chmod +x install-claracre-clas.sh
setenv CLARA_HOME \$PWD/myClara/
./install-claracre-clas.sh -v 4a.7.5
setenv COATJAVA \$CLARA_HOME/plugins/clas12/

IMPORTANT: the decoding stage (following) must be run with the compatible magnetic fields scales according to the command

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- \$COATJAVA/bin/evio2hipo -r 11 -t -1.0 -s 1.0 -o sim.hipo sim.evio
- cp /volatile/clas12/nathanh/demo_16jun17/cook.clara
- sed -i "s|MY_WORKING_DIR|\$PWD|g" cook.clara
sed -i "s|MY_NAME|whoami|g" cook.clara
sed -i "s|MY_FILE_LIST|\$PWD/files.list|g" cook.clara
ls sim.hipo > files.list
\$CLARA_HOME/bin/clara-shell
source cook.clara
run local
- exit
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