



First parallelization attempt for SND@LHC (BO)

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Problem

- ❑ SND@LHC BO is studying data taken during the test beam in August, with particular focus on shower reconstruction.
- ❑ Many “trials and errors” are necessary to find the correct algorithm and parameters.
- ❑ We need a quick way to produce plots to check our code.
- ❑ HTCondor is used to process big volumes of data but it is not always “immediate” (your jobs will wait some time in queue before being processed).



Multicore implementation of Giulia&Carlo analysis code

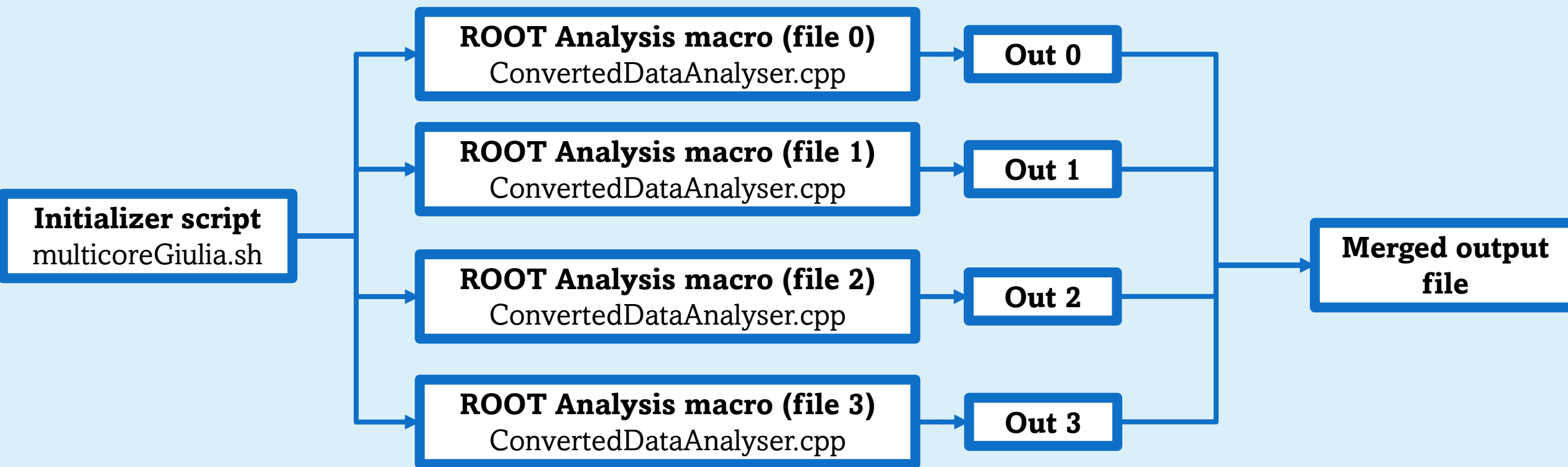
- ❑ As said last time, Giulia and Carlo are working on shower reconstruction, the code is on GitLab (https://gitlab.cern.ch/gpsndlhc/sndlhc_bo_tbanalysis).
- ❑ When using lxplus to run the analysis, processing 15 files (15M events) takes about 1h 40m.





Multicore implementation of Giulia&Carlo analysis code

- ❑ Instead of having one process analyzing N files, I create N processes analyzing one file each.





Conclusions

- ❑ Tested with run 100639, 15 files: 12m instead of 1h 40m (with 10 cores available on lxplus)
- ❑ This implementation can be found on branch “multicore” of previously linked GitLab repository (https://gitlab.cern.ch/gpsndlhc/sndlhc_bo_tbanalysis/-/tree/multicore?ref_type=heads).
- ❑ Easy to use, same parameters as non-multicore version. In sndsw environment, run the analysis with: *source multicoreGiulia.sh run_number number_files_to_read isTBdata*
- ❑ e.g. *source multicoreGiulia.sh 100639 15 true* to analyse 15 files of run 100639 of TB data