BLonD Meeting

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BLonD-MPI Status

Newly added

- Induced voltage tracking.
- Support for multiple beam, profile, etc. objects with context switching.
- Altered the processes' generation: From the dynamic `MPI.Spawn()` to the more robust `mpirun -n N`.
- MPE tracing: To get timeline charts and histograms/ per process with user defined events.

Limitations/ Next steps

- Induced voltage is calculated by the master and then broadcasted to the workers.
- To avoid the broadcast time: every worker calculates the voltage. Still it will be a serial execution (from the viewpoint of the MPI processes).
- Started to work on a realistic LHC test-case, I need 1-2 additional realistic test-cases with increased input size, even beyond what we can simulate now in a reasonable time.

BLonD Packaging

Current Status

- Everything is set-up.
- It will be a quite "major" commit: It requires to move everything under a `blond` directory + change all the import statements.
- Shouldn't break existing setups though (at least not too much).
- We can then use the PYTHONPATH variable or the other mechanisms mentioned here to switch between different blond libraries.
- Next step: Publish it to PyPI (or similar) to enable pip install blond :)

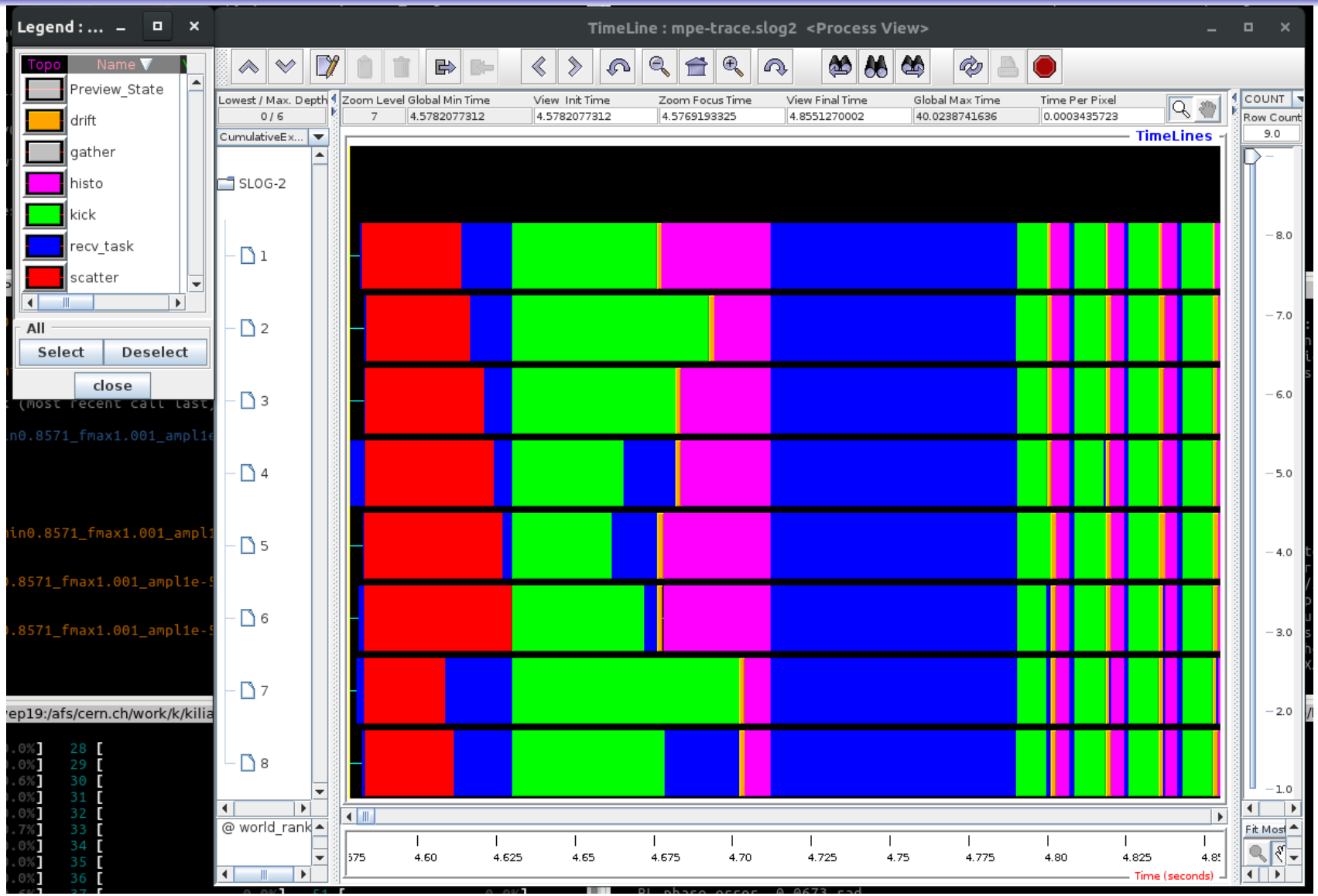
Other notes

Bug fixes and improvements

- Typo in llrf/beam_feedback.py.
  - Suggestion: to avoid similar bugs in the future, we can run all the examples as part of the CI testing.
- Clean-up needed in impedances.py: Easy to accidentally double track (once with total induced voltage and once with the tracker with `interpolation=True`).

Thank you for your attention

Jumpshot TimeLine view



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Jumpshot Histogram view