

## BLonD code development meeting

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### Discussion topics

- Blond service account created, email [blond.code@cern.ch](mailto:blond.code@cern.ch), afs directory
- Benchmarking — setting up automatic check on lxplus
- Choice of units
- Code structure: class and variable dependencies, general organisation
- Distribution of tasks
- Present priorities — ongoing simulation projects
- Preprocessing of momentum programme
- Interpolation methods
- Slices — adaptive frame for feedbacks; Gaussian fit — unstable solution
- Upgrade to python3
- Content for an update on BLonD development to be presented in the SPSU meeting this Thursday
- A.O.B.

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### Minutes

- Blond service account (`/afs/cern.ch/user/b/blond` on AFS and email: [blond.code@cern.ch](mailto:blond.code@cern.ch)), administrator Danilo
  - Automatic testing and code distribution from blond afs
- Choice of units: SI units everywhere, Alex goes through the code
- Benchmarking:
  - BLonD old version vs Theodoros' code
  - BLonD new vs old (?)
  - Test cases to be set up
- Simon will take over physics simulations, Danilo invests more time in the code
- Priorities

1. Assemble new version of BLoND with multi-bunch (even if preliminary) and new equations of motion, with python3 (but compatible python2)
    - Question: what to do if bunches have different intensities
    - Structuring of bunch and beam objects for multi-bunch version?
  2. Teamwork for benchmarking, collect test cases
  3. SPS impedance reduction
  4. PSB SC simulations
  5. LHC blow-up
- Long-term plans
6. Re-structuring the code: dependencies of objects
  7. Optimisation, parallelisation
  8. Correct treatment of high-frequency components: SC and other impedances
- Smaller pending technical issues
9. Preprocessing of momentum programme
    - remove beta and gamma, keep p and dp smooth
  10. Interpolation methods - Alex has functions prepared
  11. Slices — adaptive frame for feedbacks; Gaussian fit — unstable solution
- Documentation: keep writing!