



Agenda – 1 hour

- Gate with G4 v11
- Benchmarks
- PR + issues

- “Digitizer” project
- “gam” project

PR & issues

- [Issue #379](#): positron range, WIP Karl, Minh Phuong Nguyen
 - Discussion with Vladimir (G4) ; CSDA range ? **Still pending**
- [PR #479](#): bug correction in digitizer (**Olga**); policy for EnergyWinner
 - Will be tested in the benchmark test
- [Issue #480](#): Valgrind detects use of uninitialized values
- [Issue #478](#): parallel beam collimator
- [Issue #475](#): angular distribution with ion source
- [Issue #473](#): phsp with multiple slices
- [Issue #471](#): "unused value" -> **Wojtek**
- ... others

Gate with Geant4 version 11

- Next version will be 9.2 Feb-March 2022 ?
- Christian started
 - <https://github.com/OpenGATE/Gate/pull/462>
 - https://github.com/cpommranz/Gate/tree/towards_geant4.11.0
- Still issues with ROOT and OSX ; work in progress (Thomas)
 - Cxx 17 flag required (for root) but not set in the cmake
 - Except for libtorch flag: do be removed
 - To be included in the documentation
 - Update root v6 needed for osx
 - PR #477 almost ready to be merged
- Some physics changes:
 - dedx binning ? **Andreas** ? **Carla** and **Karl** ? In the PR, GatePhysicsList.cc

Benchmarks status

Test name	Status	Comment
t1_edep_profiles	100%	
t2_edep_vox	100%	
t3_range_e+	100%	Ok wrt historical values ; still difference with litterature #379
t4_necr	100%	
t5_pet	100%	(fake PET)
t6_dpk	100%	
t7_garf test	100%	(need libtorch)
t8_let_actor	100%	
t9_gaga_phsp	100%	(need libtorch) + bug, WIP
t10_spectro_gamma	100%	
t11_EM_field	100%	
T12_stl_volume	100%	
t13_phsp	100%	
t14_phsp_pairs	100%	(need libtorch)
t15_optical	100%	Scientillation only. Need for Cerenkov
t16_decay	100%	
t17_extended_source	100%	
t18_generic_move	100%	Moving source and detector
t19_accolinearity	80%	

Other benchmarks

- T15: (scintillation), need for Cerenkov. **Mathieu ?**
- T19: accolinearity, WIP. **Thomas / Mirjam**
- T20: **Olga**: simple PET digitizer test as a benchmark ?
 - Root file hits, singles
 - Macro + script root to convert in python
- **Wojtek**: coincidences merger test.
 - To be discussed during digitizer meeting
- **Christian** : generic repeater + coinc sorter ?

Next Gate developers meetings

[Google calendar](#)

Next meeting is planned **10/02/2022 at 9am** (1 hour max)

“New Digitizer” project (in the current GATE)

- Goal: rewrite from scratch the digitizer
 - Current groups: Orsay, Lyon, Marseille etc
 - Work in progress
 - Next (zoom) meeting 27/01 2pm
-
- First actions
 1. Collaborative document with 1) vocabulary 2) goals
Vocabulary : as close as possible from G4
<https://www.overleaf.com/4789179696mcpqhbndkkvj>
 2. Test cases with current GATE
<https://github.com/kochebina/Digi>
 3. Version 1: store Hits Collection (root) (no process, no singles, no coinc)
 4. Version 2: processes that takes 1 or more HC as input, and output another HC

New experimental project (python)

- Temporary name: gam-gate (not final!)
- Has been move to GATE github
- A list of current/future features is available, usable for dose
- Next goals:
 - Adapt current benchmarks to gam (not all yet possible)
 - Volunteers for test or adding feature ?
 - Regular meetings in 2022
 - DavidB: pencil beam ?
- Timing analysis: add optional test to specifically test speed