1st GATE Hackathon – July 3rd 2019

- Participants : 15 people

- Goal:
  - share ideas, knowledge
  - provide Pull Request
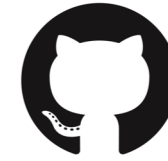 - known each others
  - have fun

1st GATE Hackathon

- [1] Isotope can be created in GateMaterialDB
- [2] Units tests
- [3] New PET sources (ortho-positronium)
- [4] G4 verbose output now optional
- [5] Improve DoseActor for Z/LET
- [6] Remove Root dependencies
- [7] Roadmap to multi-thread version

GATE release status

- Current Gate version is 8.2
  - Requires Geant4 version 10.5 (or 10.4)
  - Requires ROOT 6.x
  - Optional dependencies: Optical, Davis, ITK, RTK
  - Linux, OSX, (not Windows)
  - VM: Virtual Machine vGATE 8.2

- Current Gate RTion version is 1.0

- Benchmarks are not all up to date (wip)

- Development version: branch « *develop* »

- **GateContrib**: non curated content. Very useful for examples.

GATE future release

- Synchronized with Geant4 release (December 2019 ?)
- Probably 8.3 (upgrade) or 9.0 (major release)

- Expected features:
  - Compton Camera module
  - Improve phase-space (npy, options, etc)
  - npy output for PET/SPECT/CC
  - Neural Network phase spaces
  - Make ROOT dependency optional (?)
  - …

- **Goal1**: GateTools (python)
- **Goal2**: new documentation

GateTools

https://github.com/OpenGATE/GateTools

- **Goal.** Collaborative tools for GATE data analysis

- **Principle**
  - Python : `pip install gatetools`
  - Command line (mostly) + API
  - Collaborative repository
  - Unit tests
  - Maintained tools: not too much (selected)

- Examples:

  `gate_image_convert –i a.hdr –o a.mhd`

  `gate_image_arithm *.mhd -o sum.mhd -t 'sum'`

  `gate_root_convert_to_npy –i a.root –o a.npy`

GateDocs   https://opengate.readthedocs.io

Fact. The Gate documentation has become mostly crappy
    (even if some parts were recently well re-written)

Goal: rewrite from scratch

- New doc engine (readthedocs) for better versioning

- Need ~5-10 volunteers & 2 or 3 full-days
    1. Collaborative work on the docs organisation (examples ? Link ?)
    2. Split the writing work
    3. Done

- Like the Hackathon : the Doc-hathon ?

- In Lyon or remotely