

# Geant 4

## Kernel updates

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2017 Geant4 Collaboration Meeting

Wollongong, NSW, AU



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- Developments/refinements related to multithreading will be discussed in the next presentation.
- Besides of these, only one item is reported today. That is the framework of dealing muonic atoms. Basic idea is the following :
  - Any ion may capture a muon and becomes muonic atom.
  - All muonic atom share the common process-manager, i.e. the same scenario as G4Genericlon.
  - For the sake of promoting the developments of actual physics models for muonic atom, an interim implementation that duplicates all the generic-ion mechanisms in run, event, tracking and process/management directories has been made. They are protected by *#ifdef* to avoid performance overhead for 99.9% of users who don't care muonic atom.
    - Still brainstorming a better design without much of code duplication or considerable changes in the kernel.