

```
# *ooooO0000000000000000* #
# * * * #
# * GATE v8.1 * #
# * * * #
# *ooooO0000000000000000* #
```

```
# *-----* #
# * 04/23/2018 * #
# *-----* #
```

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General set-up and installation  
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Check the README file to have all informations related to the installation and compilation for this version.

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--I M P O R T A N T --  
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-> In the main macro file configuration, the sources MUST be defined AFTER /gate/run/initialize command line <-

-> For collimator design, the Fan Beam option is out of order and should be debugged ASAP <-

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New developments and features  
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- DOSE BY REGION

[http://wiki.opengatecollaboration.org/index.php/Users\\_Guide:Tools\\_to\\_Interact\\_with\\_the\\_Simulation:\\_Actors#Dose\\_by\\_regions](http://wiki.opengatecollaboration.org/index.php/Users_Guide:Tools_to_Interact_with_the_Simulation:_Actors#Dose_by_regions)

- TETRAHEDRON MESH VOLUME AND DOSE ACTOR ASSOCIATED

[http://wiki.opengatecollaboration.org/index.php/Users\\_Guide:Defining\\_a\\_geometry#How\\_to\\_build\\_a\\_.22TetMeshBox.22\\_volume](http://wiki.opengatecollaboration.org/index.php/Users_Guide:Defining_a_geometry#How_to_build_a_.22TetMeshBox.22_volume)  
[http://wiki.opengatecollaboration.org/index.php/Users\\_Guide:Tools\\_to\\_Interact\\_with\\_the\\_Simulation:\\_Actors#Tet-Mesh\\_Dose\\_Actor](http://wiki.opengatecollaboration.org/index.php/Users_Guide:Tools_to_Interact_with_the_Simulation:_Actors#Tet-Mesh_Dose_Actor)

- GENERIC VOLUME REPEATER

[http://wiki.opengatecollaboration.org/index.php/Users\\_Guide:Defining\\_a\\_geometry#Generic\\_repeater](http://wiki.opengatecollaboration.org/index.php/Users_Guide:Defining_a_geometry#Generic_repeater)

- X-RAY AT BOUNDARY

[http://wiki.opengatecollaboration.org/index.php/Users\\_Guide:Setting\\_up\\_the\\_physics#X-ray\\_at\\_boundary](http://wiki.opengatecollaboration.org/index.php/Users_Guide:Setting_up_the_physics#X-ray_at_boundary)

- X-RAY PHASE CONTRAST

[https://github.com/OpengATE/GateContrib/tree/master/imaging/CT/Fresnel\\_FFD](https://github.com/OpengATE/GateContrib/tree/master/imaging/CT/Fresnel_FFD)

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Bugs fixed  
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- Various corrected (and still open) bugs: see the "issues" section on the GitHub
- DoseToWater code cleaned in GateDoseActor
- DoseActor NumberOfHits + setOverWriteFilesFlag now corrected
- License files updated
- Volume rotation with isocenter (isocenter rotation is now optional via messenger)
- Allow GPS energy range with ene/min & ene/max
- Revisited voxelized source
- PhaseSpace: no branch PDGCode if not needed
- PhaseSpace: allow to start with a given particle id
- PhaseSpace: add option to project particle on a sphere
- Write head/energy/run info in mhd header of interfile projection
- Allow to perform volume rotation \*before\* repeater rotation (messenger)
- Default voxel source scale is 1.0

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Documentation updates:  
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GATE home page: <http://www.opengatecollaboration.org>  
GATE wiki:  
[http://wiki.opengatecollaboration.org/index.php/Main\\_Page](http://wiki.opengatecollaboration.org/index.php/Main_Page)  
Dedicated wiki page:  
[http://wiki.opengatecollaboration.org/index.php/Users\\_Guide\\_V8.1](http://wiki.opengatecollaboration.org/index.php/Users_Guide_V8.1)  
Installation guide:  
[http://wiki.opengatecollaboration.org/index.php/Installation\\_Guide\\_V8.1](http://wiki.opengatecollaboration.org/index.php/Installation_Guide_V8.1)

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Examples and other stuffs:  
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All examples are available on the github repository:  
<https://github.com/OpenGATE/GateContrib>