

Geant4 release 9.6+P02

USER DOCUMENTS

October 10-11, 2013 – Bordeaux, France

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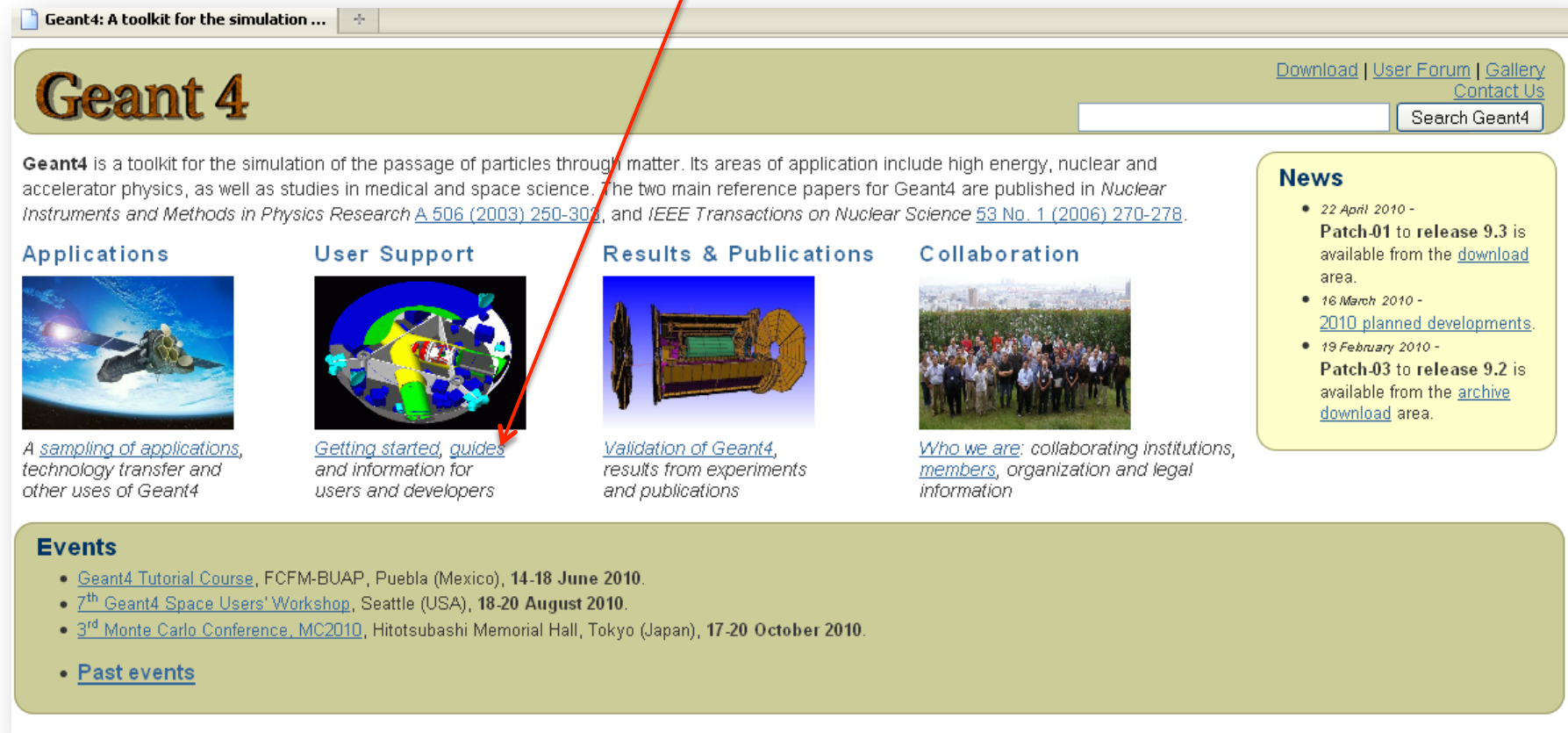
- User Documents
 - Application Developers' Guide
 - Installation Guide
 - Toolkit Developer Guide
 - Physics Reference Manual

- User Aids
 - Linux Crossed Reference (LXR) source code browser
 - HyperNews User Forum

Geant4 documentation

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<http://geant4.org>



Geant 4 [Download](#) | [User Forum](#) | [Gallery](#)
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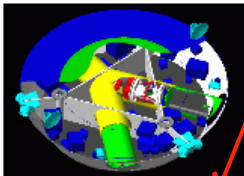
Geant4 is a toolkit for the simulation of the passage of particles through matter. Its areas of application include high energy, nuclear and accelerator physics, as well as studies in medical and space science. The two main reference papers for Geant4 are published in *Nuclear Instruments and Methods in Physics Research A* [506 \(2003\) 250-302](#), and *IEEE Transactions on Nuclear Science* [53 No. 1 \(2006\) 270-278](#).

Applications



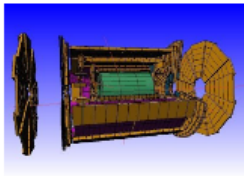
[A sampling of applications, technology transfer and other uses of Geant4](#)

User Support




[Getting started, guides and information for users and developers](#)

Results & Publications



[Validation of Geant4, results from experiments and publications](#)

Collaboration



[Who we are: collaborating institutions, members, organization and legal information](#)

News

- 22 April 2010 - **Patch-01 to release 9.3** is available from the [download](#) area.
- 16 March 2010 - [2010 planned developments](#).
- 19 February 2010 - **Patch-03 to release 9.2** is available from the [archive download](#) area.

Events

- [Geant4 Tutorial Course](#), FCFM-BUAP, Puebla (Mexico), **14-18 June 2010**.
- [7th Geant4 Space Users' Workshop](#), Seattle (USA), **18-20 August 2010**.
- [3rd Monte Carlo Conference, MC2010](#), Hitotsubashi Memorial Hall, Tokyo (Japan), **17-20 October 2010**.
- [Past events](#)

Installation guide

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- Designed for use by software experts:
<http://geant4.web.cern.ch/geant4/UserDocumentation/UsersGuides/InstallationGuide/html/index.html>
- List of **required** software
 - C++ compiler, CLHEP, GNU make, Geant4 toolkit
 - choices for visualization software
- **How to** install on **Linux**
- **Tips** for installing on **Windows**

Application Developer guide

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- URL:
<http://geant4.web.cern.ch/geant4/G4UsersDocuments/UsersGuides/ForApplicationDeveloper/html/index.html>
- Introduces **new users** to the Geant4 toolkit
- Describes the **most useful** tools
- Describes how to **set up and run** a simulation application
- Intended as an **overview** of the toolkit, not an exhaustive treatment.
For more details:
 - Physics Reference Manual : description of Physics models available in Geant4
 - Toolkit Developers Guide : in order to understand Geant4 more deeply

Toolkit Developers' Guide

- URL:
<http://geant4.web.cern.ch/geant4/UserDocumentation/UsersGuides/ForToolkitDeveloper/html/index.html>

- A description of the **object-oriented design** of the Geant4 toolkit
 - class diagrams (some UML, some other)
 - philosophy behind design choices

- A guide for users who want to **extend the functionality of Geant4**
 - adding new solids, modifying the navigator, creating new fields, etc.

Physics Reference Manual

- URL:

<http://geant4.web.cern.ch/geant4/UserDocumentation/UsersGuides/PhysicsReferenceManual/fo/PhysicsReferenceManual.pdf>

- A reference for toolkit users and developers who wish to consult the **underlying physics of an interaction**
- Presents the **theoretical formulation, model or parameterization** of the physics interactions provided by Geant4

LXR code browser

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- URL:
<http://www-geant4.kek.jp/LXR>
- Search entire Geant4 source tree by
 - filename (e.g. [G4Track.hh](#))
 - text
 - identifier
- Results: a source file fully hyper-linked to classes and methods
 - tells where classes and methods are defined
 - also where they are referenced
- Recently added a **doxygen** version:
 - <http://www-geant4.kek.jp/Reference>

Geant4 Geant4 LXR

Geant4 Cross Reference

Search Menu:

[geant4/](#) Browse the source code tree.

File Name Search
Search for files by name (case sensitive).

Full-Text Search
Search through all the text.

Identifier Search
Find a class, method, variable, etc.

Hi,

This is an interactive viewing and searching facility for the Geant4 source code. It offers:

- Source-tree browsing and file name search** to easily find source files and navigate through the source directories.
- Full-text indexing** for fast retrieval of source files containing a given word or pattern.
- Identifier cross-reference** for fully hyperlinked source code. The names of classes, methods, and data can be clicked on to find the source files where they are defined and used.

The full-text indexing and retrieval are implemented using [Glimpse](#), so all the capabilities of Glimpse are available. Please see [Glimpse document](#) for details. Note that glimpse syntax is available for text and identifier searches. For file name search, please use regular expression.

Note

All source files are rendered into HTML. Do not attempt to download the Geant4 source code from this site!

Links

[Yet another version of Geant4 LXR](#) (editor's cut)
[Geant4 Reference Guide](#) (Doxygen)

LXR powered.
For feedback, please contact [KM](#).

HyperNews user forum

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- URL:
<http://hypernews.slac.stanford.edu/HyperNews/geant4/cindex>
- See also top of Geant4 home page
- **Discuss problems** with other users, post questions for experts, etc.
- **26 forums** roughly based on Geant4 categories
- **4 forums** for specific application areas (education, medicine, space, industry)
- New forums may be requested by users
- To join: click on “New member” at top of page and fill out form

GEANT4 at hypernews.slac.stanford.edu Forum List by Category Not Logged In ([login](#))

Geant 4 [Forums by Category](#) [Recent Postings](#) [Member Info](#) [Overview](#)
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[Page Help](#)

Category: Applications

Educational Applications	Industrial instruments	Medical Applications
Space Applications		

Category: Control of runs, events, tracks, particles

Event and Track Management	Multithreading	Particles
Run Management		

Category: Experimental Setup

Biasing and Scoring	Fields: Magnetic and Otherwise	Geometry
Hits, Digitization and Pileup		

Category: General matters

Documentation and Examples	HyperNews System Announcements	Hypernews Testing
Installation and Configuration	User Requirements	

Category: Interfaces

(Graphical) User Interfaces	Analysis	Persistency
Visualization		

Category: Physics

Biasing and Scoring	Electromagnetic Processes	Fast Simulation, Transportation & Others
Hadronic Processes	Physics List	Processes Involving Optical Photons

This site runs SLAC HyperNews version 1.11-siac-98, derived from the original HyperNews

Bug report system

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□ URL

<http://bugzilla-geant4.kek.jp/>

□ files details of problems reported by users and developers

□ You need to register




The screenshot shows the main page of the Geant4 Bugzilla/Geant4 system. The page title is "Geant4 Bugzilla/Geant4 - Main Page" and the version is 4.0.4. The page includes a navigation menu with links for Home, New, Browse, Search, and Reports. There is a search box and a "Search" button. Below the navigation menu, there are links for New Account, Log In, and Forgot Password. The main content area is titled "Geant4 Problem Tracking System" and contains a description of the system, a "New Account" section, a "Problem Reports" section, a "Searching" section, a "Tracking" section, and a "Reports" section. The "New Account" section explains that users need an account to submit problems and provides a link to "Create a new account". The "Searching" section provides links for finding specific problems, querying problem reports, and quick search. The "Tracking" section provides links for the most severe problems, new problems, latest updated problems, and latest fixed problems. The "Reports" section is currently empty.

Geant4 Geant4 Problem Tracking System

Bugzilla/Geant4 - Main Page version 4.0.4

[Home](#) | [New](#) | [Browse](#) | [Search](#) | [\[?\]](#) | [Reports](#)

[New Account](#) | [Log In](#) | [Forgot Password](#)

Geant4 Problem Tracking System 

This is Geant4 problem tracking system which files details of problems reported by users and developers. Each report is given a number, and is kept on file until it is marked as having been dealt with. For participating you need a personal account which will gain you the ability to post reports and comments as well as voting for specific reports and observe development. You'll need to enable cookies for this site for staying logged in.

Problem Reports

[Report a new problem](#)
[Components list](#)

Searching

[Find a specific problem](#)
[Query problem reports \(advanced\)](#)
[Quick search](#)

Tracking

[The most severe problems](#)
[New problems \(not yet responded!\)](#)
[The latest updated problems \(in the past 120 days\)](#)
[The latest fixed problems \(in the past 120 days\)](#)

Reports

New Account

To submit a new problem, you need to have an account in Bugzilla/Geant4. Login ID is a legitimate e-mail address, which will be used for communication during bug tracking.

[Create a new account](#)

Problem #:

News

- The system was replaced, updated to Bugzilla 4.0.4. (20/Feb/2012 K.M)

Summary

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- **Installation and Application Developers Guides**
 - ▣ tell you how to get started building and running a simulation
- **Toolkit Developers' Guide**
 - ▣ For a deeper knowledge of the structure and philosophy of Geant4
- **Physics Reference Manual**
 - ▣ to learn about the physics of Geant4
- A **cross reference browser** (LXR) is available for studying source code
- A **user forum** is available for sharing ideas, asking questions