

Geant 4

A Short Course on Geant4 Simulation Toolkit

How to learn more?

IEEE NSS/MIC 2003

Portland, 19 October 2003

<http://www.ge.infn.it/geant4/events/nss2003/geant4course.html>

<http://cern.ch/geant4>

Main Subject of This Lecture

How can you get more information about Geant4?

- Documentation
- User support

Geant4 Web Home Page

■ The main source of information

← *All important information can be accessed through this page.*

■ Address

<http://geant4.web.cern.ch/>

■ You can find

- Documentation
- User Forum
- Support
- Download
- Results & Publications
- OO Analysis & Design
- News
- Organization



Documentation

■ Coverage

It covers all the information necessary for newcomers to advanced users, and for those who want to extend functionality of Geant4.

■ Basic structure

- An introduction document and 5 user manuals.
- Available in *html, pdf, ps, ps.gz*
- Search engine

Search a key over the entire Geant4 documents

← *Very powerful to find a specific topic.*

Overview of the User Manuals-1

■ Introduction of Geant4

- Information on the Geant4 collaboration, history, etc.
 ← *You may skip this!*
- Basic information such as
 - required minimal software knowledge
 - computing environment
 - guide line for user supports, etc.

■ Installation Guide

- How to install Geant4 in the user's computing environment
- Detail instructions for
 - Unix
 - Windows

Overview of the User Manuals-2

■ User's Guide: For Application Developers

- **Most important document** both for novice & advance users.
- Step-by-step tutorial for a novice user
- How to use the toolkit with a lot of example codes
 - ← *You should read this first if you are new to G4.*

■ User's Guide: For Toolkit Developers

- For a user who wants to extend the functionality
 - ← *For examples, to add a new physics process, a new volume shape, etc.*
- Description of the object-oriented analysis and design
- Guidance on how to extend specific aspects of the functionality of each class category.
 - ← *Document under the construction - can skip this!*

Overview of the User Manuals-3

■ Physics Reference Manual

- Description of physics interaction models
- Separation of physics topics from how to use the toolkit.
 - ➔ *Dedicated to physics models, theories, etc*

■ Software Reference Manual

- Detailed description of classes and their public methods.
- Automatic generation on demand by the CGI script
 - ➔ *No printed version is available, i.e. only on web page.*

User Supports: HyperNews User Forum

- Exchange of questions and experiences among users and developers.
- Based on the HyperNew system.
 - Anyone can read
 - Anyone can add messages
 - Anyone can join a membership
- Available main subjects (*~ 20 forums available*)
 - Control of runs, events, tracks, particles
 - Experimental Setup
 - General matters
 - Interfaces
 - Physics

■ To access to this forum:

[Geant4 Home Page](#)

➔ [User Forum](#)



User Supports: Problem Reporting

- You can report a problem you encounter and ask developers to fix it.
 - Anyone can send a report once he/she registers to the problem report system.
 - Problem report will be sent to an expert automatically.
 - History of handling the problem will be recorded
 - You can trace the history of your problem via web.

✓ *Some notes*

- Before making a report, check the list of known problems.
- You can check this on web.
- To access to this system:

Geant4 Home Page

➔ *Support*

➔ *Training Material*



User Supports: Training Materials

- The Geant4 collaboration regularly held both international and domestic training courses.
- You can find materials presented in these courses under the following web page:

Geant4 Home Page

→ *Support*

→ *Training Material*

User Supports: Other Useful Information-1

■ FAQ

Geant4 Home Page

→ *Support*

→ *FAQ*

■ Cross referenced (LXR) source code browser:

Geant4 Home Page

→ *Support*

→ *LXR source code browser*

■ Educated guess of PhysicsList (*for hadronic*)

Geant4 Home Page

→ *Support*

→ *Physics Lists*

User Supports: Other Useful Information-2

- Download the most recent released codes:

Geant4 Home Page

→ *Download*

- A collection of Geant4 reports, results, publications, etc

Geant4 Home Page

→ *Results & Publication*

- News – web archives for the Geant4 mailing list

Geant4 Home Page

→ *News*

That's all.

Any question?