

# Geant 4

*IEEE Nuclear Science Symposium and Medical Imaging Conference  
Short Course*

## **Simulation Techniques Using Geant4**

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<http://www.ge.infn.it/geant4/events/nss2008/geant4course.html>

This course exploits training material developed by several Geant4  
Collaboration members: thanks to all of them!

# How to learn more

Documentation  
User Support

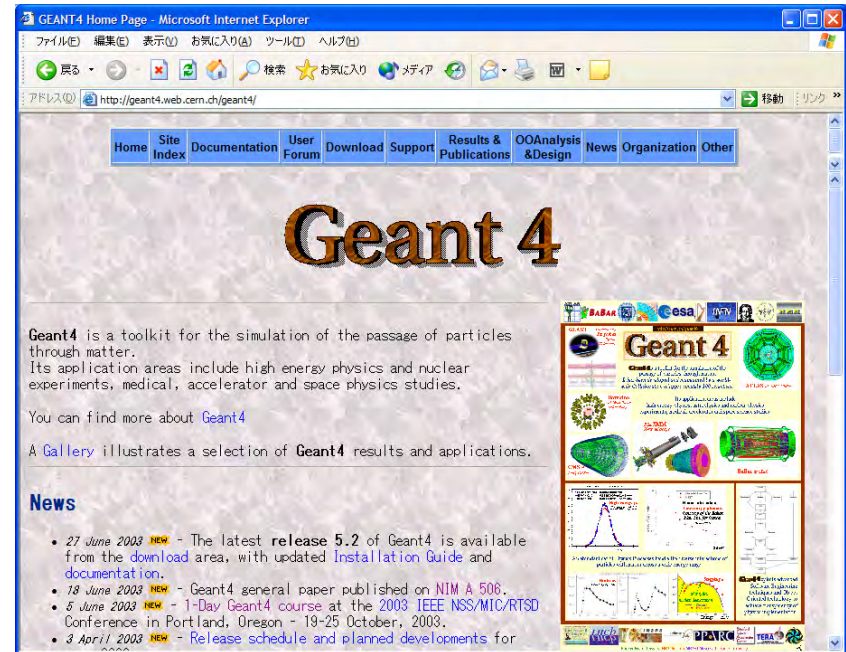
# After the course

## 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://cern.ch/geant4>
- You can find
  - Documentation
  - User Forum
  - Support
  - Download



- Results & Publications
- OO Analysis & Design
- News
- Organization

# Documentation

- Coverage

- It covers all the information necessary to newcomers to advanced users, and to those who want to extend the 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 documentation

# 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 & advanced users
  - Step-by-step tutorial for a novice user
  - How to use the toolkit with a lot of example code
    - You should read this first if you are new to Geant4
- **User's Guide: For Toolkit Developers**
  - For a user who wants to extend the functionality
    - For example, 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 package
    - Document under construction – not urgent for new users!

# 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, theory, 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 Support: HyperNews User Forum

- Exchange of questions and experience among users and developers
- Based on the HyperNews system
  - Anyone can read
  - Anyone can add messages
  - Anyone can join as a member
- Many subjects (~ 20 fora available)
  - Control of runs, events, tracks, particles
  - Experimental Setup
  - General matters
  - Interfaces
  - Physics etc...
- To access to this forum:
  - Geant4 Home Page
    - User Forum



# User Support: 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 Support: Training Material

- The Geant4 collaboration regularly holds both international and national/specific training courses
- You can find material presented in these courses under the following web page:
  - Geant4 Home Page
    - Support
    - Training Material

# User Support: 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 Support: 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