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Hands On Sessions

SLAC Geant4 Tutorial 2014

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Office of Science

SLAC NATIONAL ACCELERATOR LABORATORY

Exercises

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- There are four hands on sessions:
  - Hands On 1 : Compile Geant4 and one example, familiarize with application
  - Hands On 2 : A very simple geometry, command line scoring
  - Hands On 3 : Building Geometry, Sensitive Detectors and introduction to User Actions
  - Hands On 4 : More on User Actions, Multi-Threading integration, Histograms and Ntuples production

- Hands On **are self contained**, you do not need to finish all exercises of one hands on to proceed to the next
- Hands On 3 is probably the most complex since goes through many geometry details
- "Hands On 4, Exercise 1 and 2" assume you are familiar with concepts that are discussed in "Hands On 3, Exercise 2 and 3" this is probably the only strong dependency between exercises
- Hands On 4 Exercise 3 deals with g4analysis, optional if you are not interested

How to

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- Each Hands On session has a web-page in which the exercises are discussed
- Code tar-ball is linked from the web-page
- A tar-ball with the complete solution (e.g. what you will get at the end of each Hands On) is also available for each Hands On
- The solution code is also shown in the web-page.
  - Feel free to cut-and-paste, the goal is to point you out at the different aspects of the simulation, not to learn C++
  - Feel free to modify/extend the provided solution: it is only a guideline
  - Feel free to extend the application to test your particular needs
- We have tested the code, but if you think you have found a problem let us know!

Some Notes

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- Visualization: it is useful to be able to visualize the geometry, especially for beginners
  - **However this is optional, only one (optional) exercise is specific to visualization**
- We have chosen to show you what is probably the most common visualization driver (OpenGL), integrated with something relatively new: Qt interface (point-and-click interface)
  - You need Qt version 4 for this (V3 is obsolete but it should work, 5 is experimental and will give you problems)
  - **GUI is optional, exercises will work even without Qt. A visualization window will appear even without Qt**
- **Do not lose time trying to install/configure Qt 4**! This is not a visualization tutorial! Material will remain available and you can try it out at home

More Notes

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- Multi-threading: on a recent linux or Mac OS X box you should be able to activate MT without problems
- **This is optional, all exercises will work also without MT support**