

Harry Nelson Group,

Readme for Neutron Simulation Project files

Stand-alone projects

Hopefully this will make clear the state in which I've left the simulation project. For starters, all the projects that compile and can be run—to produce output—have been compressed in tarballs. Here is a short description of what these “sub”-projects do:

WaterWorld.tar.gz This is a very simple environment consisting of just a “world” volume filled entirely with (GdCl₃-doped) water. The particle gun at the center of the world fires neutrons. Note that the energy of the neutron(s) must be specified using `/gun/energy` before `/run/beamOn`. This uses a physics list taken from the “Underground Physics” advanced example in the Geant4 download.

SimpleElectronTracking.tar.gz This is also very simple. This time a volume of water resides in a world volume. Electrons are fired instead, and various modular physics processes are used. These should be switched on or off depending on the simulation. This project was used to produce all those histograms in the presentation describing Čerenkov threshold distances, angles, *et cetera*.

Simulation of actual experiment

I've also included the Geant4 simulation for the actual experiment. This consists of the (debugged) detector geometry and supporting files. This is in `NeutronSimulationProject.tar.gz`.

Other work

I've uploaded all of my MATLAB figures to the wiki page at:

<http://cdms.physics.ucsb.edu/neutron/wiki/>.

I've spoken with Christine and updated her. If I've missed anything out, please send me an e-mail! It's

leetomlinson@live.co.uk

Best,
Lee Tomlinson