

GENIE - Feature #6518

Allow user to specify the UserPhysicsOptions name/location.

06/18/2014 01:01 PM - Gabriel Perdue

Status:	New	Start date:	06/18/2014
Priority:	Normal	Due date:	11/30/2015
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:		Spent time:	0.00 hour
Description			
Rather than only having a hard-coded default for the location and name of the "UserPhysicsOptions.xml" configuration file, consider making this something users can set via an environment variable or a command-line flag.			

History

#1 - 10/20/2014 11:34 AM - Gabriel Perdue

- Due date changed from 09/18/2014 to 03/31/2015

#2 - 10/05/2015 10:00 AM - Gabriel Perdue

- Due date changed from 03/31/2015 to 11/30/2015

Does this already exist?

#3 - 10/05/2015 10:17 AM - Robert Hatcher

While it is true that the name UserPhysicsOptions.xml is hardcoded into place, the location is not:

```
./Algorithm/AlgConfigPool.cxx: string glob_params = utils::xml::GetXMLFilePath("UserPhysicsOptions.xml");
```

The GetXMLFilePath() function searches the in the following order:

- \$GXMLPATH
- \$GXMLPATHS # due to early confusion about existence of 'S'
- \$GALGCONF # Hugh's special path
- \$GENIE/config
- \$GENIE/src/FluxDrivers/GNuMINtuple # special for finding flux driver config

NOvA/LArSoft make use of this ability by using a specialized UserPhysicsOptions.xml that forced GENIE to decay (via Pythia) charmed hadrons and tau leptons by setting up a UPS product, ala: setup genie_phyopt v2_8_6 -q dkcharmtau (or dkcharm). They do this because out-of-the-box Geant4 doesn't properly generate decay products for charmed hadrons (and at one point didn't do taus either).

What the system *doesn't* support is partial & chained UserPhysicsOptions.xml. That is one can't modify only part of the file and then have it read the base and then override some sections with a partial file. This makes it awkward to support multiple distinct changes (say both something like M_A and the charm decay). To do this properly one would need to be able to specify alternative names.