

Summary of Data

J. Apostolakis (rapporteur)

Neutron Data Library (G4NDL)

- Current version G4NDL (current version 3.9)
- Tatsumi is in the process of reducing our dependence on the number of external databases. By Geant4 9.1 or so, we will depend only on ENDF and JENDL.
 - He also has plans to extend the HP energy range up to 150 MeV. Requests for new processed data continue.
 - There are constraints from the US Dept. of Commerce export regulations, through the use of the NJOY program we use to convert data from ENDF format to Geant4 format.
- The version of G4NDL without thermal cross sections (0.2) is officially not maintained.
 - There have been requests for its update, but we do not have people to do it.
 - We have answered users that we will advise them if they do most of the work.

Dennis Wright, Tatsumi Koi

Photon-Evaporation, Radioactive Decay

- No changes or news about the Photon Evaporation data library (derived from ENDSF).
- RadioactiveDecay3.0 (based on ENDSF)
 - Marcus Mendenhall (Vanderbilt) has pointed out many errors in this file and offered a script to fix them.
 - Fan Lei has agreed to apply the corrections and produce version 3.1 of this file.
- Medium to high energy elastic scattering data file - wholly authored by Nikolai Starkov.
 - No recent changes to the data file, but Nikolai is developing a new model which incorporates this data and will not in future require a downloadable file.

Dennis Wright

Low-E EM – Livermore libraries

- Concerning “the usage of the Livermore libraries in Geant4 LowE EM code,
 - “has changed since 1998 (neither the libraries themselves, nor how we re-distribute and use them).”

M. G. Pia

Issues Concerning Geant4 Data Libraries (Sept 2005)

Main Issues:

- I. Current Geant4 Data Libraries Those Responsible / Interested
 - A. G4NDL (neutron data libraries) HPW, Dennis Wright
 - B. Low-energy electron/gamma libraries Vladimir Ivantchenko, M.G. Pia
 - C. Radioactive decay Peter Truscott, Fan Lei
 - D. Photon evaporation Peter Truscott (?)
 - E. High-energy hadronic elastic scattering Nikolai Starkov
- II. Content
 - A. What is the origin of the data for each element/isotope?
 - 1. databases outside of Geant4
 - 2. databases generated within Geant4
 - B. Why was a particular data set chosen?
 - C. Quality of data
 - 1. Gaps in elements, isotope chains
 - 2. If multiple databases cover same data, which is best?
 - 3. Are there problems with current libraries ? The statement on hypernews that problems exist is difficult to understand.
- III. Acknowledgement/Scientific Credit
 - A. Identify current source data libraries used for creating G4 data library
 - 1. Create authoritative list of sources for each G4 derived library
 - B. Acknowledge each source on Geant4 web site
 - C. Incorporate more acknowledgements in downloaded libraries,
 - D. Disputes
 - 1. In case a problem is identified, working to find a solution
 - 2. Bring problem to TSB / CB

Issues Concerning Geant4 Data Libraries (Sept 2005) - cont

- IV. Legal aspects
 - A. Use and re-use agreements
 - 1. (double) checking what the conditions of use and requested attribution/acknowledgement are
 - 2. Guidance for creating a set of 'Usage conditions' for the Geant4 libraries
 - 3. A usage policy for our G4 derived data libraries can be an important solution, and can summarise and refer to restrictions or issues from source data libraries.
 - B. Copyrights
 - 1. Do copyright issues exist, given license conditions and usage?
- V. Maintenance
 - A. Keep all libraries current
 - B. User support
 - C. Appoint overall Geant4 database manager?
- VI. Documentation
 - A. document the exact content of each Geant4 data library and its correspondance to source libraries
 - B. explanation of format
 - C. Instructions for use of libraries
 - D. Authorship/origin