Outline of JENDL-5   JENDL-5 の概要

Thursday, 18 November 2021 13:00 (30 minutes)

The next version of JENDL general purpose library, JENDL-5, is almost ready to be released. JENDL-5 increases variety and amount of data from the current version JENDL-4.0. Regarding the neutron induced reaction data, which is the most important for reactor applications, the number of the stored nuclides will be around 800, which is almost double of 406 as of JENDL-4.0. They cover not only all stable isotopes but also a large number of unstable isotopes that are much enough for various applications of radiation simulations. The data from light to heavy nuclides have been revised reflecting up-to-date experimental knowledge such as new measurements of cross sections by ANNRI at J-PARC. Fission yield and decay data are also revised with new experimental and theoretical knowledge. New evaluations of thermal scattering law data based on molecular dynamics are adopted for many of materials in JENDL-5 including light and heavy water. The data of other incident particles than neutron that have been developed as special-purpose files are integrated into JENDL-5. For proton, deuteron, alpha-particle and photon induced reactions, the data of JENDL-4.0/HE, JENDL/ImPACT-2018, JENDL/DEU-2020, JENDL/AN-2005, JENDL/PD-2016.1 are adopted. Since JENDL/AN-2005 contains only neutron-emission related data, date needed for radiation transportation codes are complemented. Regarding neutron induced reaction, the data of high energy reaction above 20 MeV and activation cross section are also integrated from JENDL-4.0/HE, JENDL/ImPACT-2018 and JENDL/AD-2017. We hope JENDL-5 will facilitate wide spreading research and developments for nuclear technologies.

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