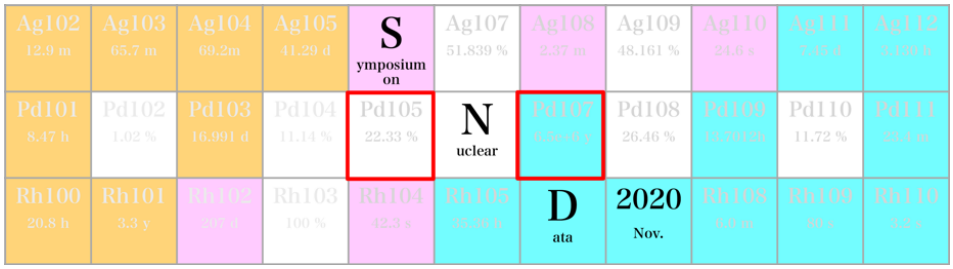

Contribution ID: **31** Type: **Poster Presentation**

SCALE6.2 ORIGEN library produced from JENDL/AD-2017 / JENDL/AD-2017 から作成した SCALE6.2 の ORIGEN ライブラリ

Thursday, 26 November 2020 16:57 (1h 53m)

Oak Ridge National Laboratory released the SCALE6.2 code [1] in 2016 (the latest version is SCALE6.2.4). The ORIGEN code [1] in SCALE6.2 is completely different from the ORIGEN-S code [2] until SCALE6.0 [2].
1) ORIGEN uses one group cross section data generated from a specified neutron spectrum and a multigroup activation library with the COUPLE code [1], not three group cross section data with a typical neutron spectrum.
2) The input format of ORIGEN is easy to use and understand.
3) It is expected that the calculation accuracy improves because ORIGEN uses one group cross section data generated from neutron spectra in all calculation points.
4) The calculation time of ORIGEN including COUPLE is at most about twice of that of ORIGEN-S even for 200 groups.
We expect that ORIGEN in SCALE6.2 will be mainly used for activation calculations in nuclear facility decommissioning. Thus we produced a SCALE6.2 ORIGEN library from JENDL Activation Cross Section File for Nuclear Decommissioning 2017 (JENDL/AD-2017) [3] with the AMPX-6 [4] in order to popularize JENDL/AD-2017 widely. The processing conditions are as follows.
- Temperature : 300 K
- Group structure : 200 groups (the same as one of libraries attached in SCALE6.2)
- Weight function : Maxwell+1/E+Fission spectrum + 1/E (above 10 MeV)
- Infinite dilution
We tested the SCALE6.2 ORIGEN library of JENDL/AD-2017 with the JPDR decommissioning data [5], which demonstrated the library had no problem.

References
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Primary author: Dr KONNO / 今野, Chikara / 力 (Japan Atomic Energy Agency / 日本原子力研究開発機構)

Co-authors: Ms KOCHIYAMA / 河内山, Mami / 真美 (Japan Atomic Energy Agency / 日本原子力研究開発機構); Mr HAYASHI / 林, Hirokazu / 宏一 (Japan Atomic Energy Agency / 日本原子力研究開発機構)

Presenter: Dr KONNO / 今野, Chikara / 力 (Japan Atomic Energy Agency / 日本原子力研究開発機構)

Session Classification: Poster