



D. Rochman (PSI) and M. Herman (LANL)

Status of SG-49

- Goals of SG49 (Reproducibility in Nuclear Data Evaluation):
 - Develop NEA Gitlab repository to model codes, inputs
 - Demonstrate the automation and reproducibility of selected evaluations
 - Report on guidance, recommendation, possible limitations
- Range of application
 - Neutron evaluations
 - RRR+URR (Sammy, Refit)
 - URR+Fast range (EMPIRE, TALYS, T6)
 - TSL
- Links with
 - Library projects
 - Other SG: GNDS, 45, 47, 48 and 50 (Benchmarks, TSL, EXFOR)

Meetings and achievements

- 4 meetings so far (Nov 2019, May 2020, Nov 2020, May 2021)
- Setup of the Git environments for EMPIRE evaluation on Fe-58
- Demonstration of TALYS/T6 automated evaluation scheme (but not in Git)
- The “Uppsala/IAEA/PSI pipeline”: another working example
- Exploration studies for the RRR with SAMMY (local repository)
- Git page for TSL
- “Discoveries”:
 - Necessity of a robust EXFOR
 - Required data beyond simple code inputs (assumptions, fits...)
 - Clean programming (separation of databases and codes)
 - Openness vs. copyright **or proprietary?**
 - Evaluator motivation (e.g. library rules)

- Consolidation of the existing examples
- Reporting in support of
 - Before the evaluation: formulate recommendations for developers, evaluators, library projects and Git owners
 - During the evaluation: include physics, mathematics and “other” calculations
 - After the evaluation: automated validation with differential & integral data

Coming next (alternative)

- Consolidation of the existing examples
- Service codes such as DeCE, ENDFtk, C4SERVICE, ...
- Work out recommendations for
 - Storing all inputs necessary to reproduce evaluation (exact version of the codes, input files, scripts, experimental data used)
 - Documentation of the evaluation procedure (write up, justification for use of experimental data, covariances, new possibilities of GNDS...)
 - Uniform organization of the files considering variety of the codes and formats
 - Verification and validation procedures ??? Not sure about this
- Coordinate with GNDS, SG 45, 47, 48 and 50

Wir schaffen Wissen – heute für morgen

