PAUL SCHERRER INSTITUT

PSI

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

Status of SG-49

WPEC-33 Meeting, 14 May 2021

Zertifiziertes Managementsystem
STARS
ISO 9001

Summary of the SG49

- 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)

Coming next

- 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)
- Coordinate with GNDS, SG 45, 47, 48 and 50

PAUL SCHERRER INSTITUT

PSI

Wir schaffen Wissen – heute für morgen