

WIR SCHAFFEN WISSEN – HEUTE FÜR MORGEN



M. Hursin (PSI), O. Cabellos (UPM)

SG46 Status report

WPEC33, May 14th, 2021 (WebEx Meeting)

Reminder SG46 mandate

The best way we can honour Massimo is by continuing to the SG46 he initiated

- SG46 is the bridge between ND evaluators and end-users in the utilisation of integral experiments
- SG46 may play an important role for the ND community
... JEFF-4T0 (Nov 2020).... JENDL-5 (2021) ...

SG46's main goals are

- Guidelines for selecting and prioritizing integral experiments **for nuclear data validation**
- Generalized adjustment methodologies to provide **unambiguous feedbacks** to evaluators
- SG26's **updated values for HPRL**
 - To review target accuracies for nuclear data uncertainty reduction
 - To add new reactor systems: SMRs, etc...
 - Revision of the “inverse problem” methodology

Collaboration with other WPEC/SGs

- SG-C(HPRL)
- SG44
- SG45
- SG47 and others

- After cancelling the spring 2020 meeting due to M. Salvatores passing, SG46 activities continued with new chairs
- In 32nd-WPEC meeting (May 15th, 2020), O. Cabellos is proposed as new co-chair of SG46 and it is accepted by the WPEC committee
- In August 2021, P. Palmiotti announced stepping down as chair of the SG46
- In the SG46/November 2020 meeting, a new coordination for the WPEC/SG46 was proposed and approved by the participants of SG46:
 - “O. Cabellos UPM) and M. Hursin (PSI) will be co-ordinating and co-charing SG46 activities till the end of mandate”
- Since then,
 - A dedicated meeting on Target Accuracy Requirements (TAR) was organized in April 14th, 2021
 - WPEC/SG46 meeting is held on May 12th, 2021

Recent meetings (2020)

- November 11th, 2020 (~40 participants)
 - Reactivity and sensitivity calculation results with leakage and non-leakage components for sodium void reactivity of the 750MWe JSFR core (**K. Yokoyama**)
 - JSFR Sensitivity Calculation Results (**K. Yokoyama**)
 - IRSN contributions: from TARs and S/U to V&UQ via DA (**E. Ivanov**)
 - Joint UPM and CIEMAT contribution: Progress on ESFR (**A. Jiménez-Carrascosa**)
 - WPEC SG47 SINBAD: Possible synergies with SG46, (**I. Kodeli**)
 - Nuclear data verification with depletion calculations, (**P. Romojaró**)
 - Constrained Bayesian Optimization of Criticality Experiments, (**D. Siefman**)
 - Using Machine Learning Algorithms for Large-scale Nuclear-data Validation (**D. Neudecker**)

Recent meetings (2021)

- April 14th, 2021 (~50 participants)
 - TARs overview for SMRs, MSRs and HTGRs, TSO point of view (**E. Ivanov**)
 - Nuclear Data Accuracy Needs for Mobile Reactors (**B. Rearden**)
 - Target Accuracy Requirements for Sodium Fast Reactor (**L. Buiron**)
 - Input Information for SG46 Target Accuracy Requirements (TAR) Exercise using Models of 750MWe JSFR Core (**K. Yokoyama**)
 - TAR Update: Application to ALFRED (**G. Grasso**)
 - Proposal of Target Accuracy for ADS Neutronics Design (**T. Sugawara**)
 - WPEC/SG-46 nuclear data target accuracies: MYRRHA (**L. Fiorito**)
 - WPEC Subgroup 46 Activity on "Target Accuracy Requirements (TAR)" (**C. Schneidesch**)
 - TAR in the back-end fuel: mid- and long-term storage from a neutronics aspect (**D. Rochman**)
 - The back-end fuel: focus on spent nuclear fuel characterization (**A. Sjöland**)

- May 2021 (~40 participants)

TAR activities

- Benchmark Specifications and Guidelines for the WPEC/SG46 exercise on TAR (**O. Cabellos**)
- TAR: Impact of taking into account correlations (**P. Palmiotti**)

Methodology

- The plans for integral adjustment using marginal likelihood optimization at Uppsala university (**H. Sjostrand**)
- Status of IRSN contribution (**E. Ivanov**)
- Pulsed Neutron Die Away Experiments at Lawrence Livermore National Laboratory (**D. Siefman**)



Future actions

- Subgroup is very active, new ideas are being brought forward by participants
- Path forward for SG46 as of May 2021
 - Consolidation of the methodology activities of SG46 through the production of an **Intermediate Report**
 - Discussion towards organizing a **set of tests/exercises** to assess the differences/performances of the methodological developments
 - **Specifications for a practical TAR exercise** have been distributed; participants to the exercise identified; first results by the end of 2021
 - Review TAR values of WPEC/SG26 ... impact on **HPRL**
- An **extension of the SG46 mandate is needed** to carry out those activities
- Next meeting in December 2021

**Thank you for
your attention !**

