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**Subject:** Online Foreign Trip to IAEA Vienna  
**Date:** 01/21/2022  
**To:** Dr. Angela Chambers, Nuclear Criticality Safety Program Manager, National Nuclear Security Administration / NA-511  
**From:** Dorothea Wiarda

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**Meeting Title:** Technical Meeting on Nuclear Data Processing

**Meeting Location:** IAEA Vienna via WebEx

**Meeting Date:** 18-22 October 2021

**Attendees on behalf of NCSP:**

Andrew Holcomb

**Meeting Purpose:**

The overall objective of the IAEA Project is to validate nuclear data processing codes that can prepare data libraries in ACE format for continuous-energy Monte Carlo calculations. Specific objective is to compare the results from different codes and provide recommendations and best practices in data processing.

**Meeting Benefits to the NCSP:**

Ensure that US processing codes and results continue to be recognized in the international community.

**Purpose of Travel:**

Participate in the Technical Meeting on Nuclear Data Processing and to keep appraises of developments in the international nuclear data processing.

**Persons Contacted at Meeting:**

see attached

**Presentations, Chair Responsibilities, Etc.**

**Distribution:**

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# Technical Meeting on Nuclear Data Processing

18-22 October 2021, IAEA Headquarters, Vienna, Austria

- ⤴ Participants
- Alexander Listov
- Beck Bret
- David Browne
- Oliver Buss
- Dermott E. Cullen
- Daniel Lopez Aldama
- Daniela Foligno
- Nathan Gibson
- Wim Haeck
- Andrew Holcomb
- Jaakko Leppanen
- Clement Jeannesson
- Cederic Jouanne
- Albert Kahler
- Do Heon Kim
- Luiz Leal
- Dieter Leichtle
- Mark Cornock
- Caleb M. Matoon
- Michael L. Zerkle
- Michael Fleming
- Morgan Lee
- Nicolas Leclaire
- Oscar Cabellos
- Paul Romano
- Marco T. Pigni
- Raphaelle Ichou
- Valentin Sinitza
- Kenichi Tada
- Tiejun Zu
- Ville Valtavirta
- Tim Ware
- Doro Wiarda
- Wu Xiaofei
- Yaron Danon

⤴ Scientific Secretary  
R. Capote Noy

⤴ Coordinator  
A. Trkov

⤴ Contacts  
A. Koning

⤴ Links  
Nuclear Data Services  
Nuclear Data Section  
IAEA

## Agenda

The preliminary agenda is available [here](#).

## Background

The Meeting is a follow-up of meeting of this subject in September 2019 [TM NDP 2019](#) and previous meetings on this subject. A number of codes that can process evaluated nuclear data files became available.

## Objectives

The overall objective of the IAEA Project is to validate nuclear data processing codes that can prepare data libraries in ACE format for continuous-energy Monte Carlo calculations. Specific objective is to compare the results from different codes and provide recommendations and best practices in data processing.

At the previous Meeting the results of the first phase of the data processing exercise were discussed, in which the codes were found to adequately process the cross sections and differential data. The test problem was processing of given evaluations for U-235 and U-238. The generated ACE files were tested on a selected group of benchmark experiments from the ICSBEP Handbook. Without self-shielding the calculated multiplication factors agreed to within the statistical uncertainty. When data processing included the preparation of probability tables (or multi-band parameters) in the unresolved resonance range to account for self-shielding, the results differed by up to 100 pcm due to different methods applied in different codes; the total worth of self-shielding in some benchmarks amounted to more than 1000 pcm. The uncertainties in the benchmarks did not permit an assessment of the accuracy of the different methods.

The next phase of the exercise involved the processing of thermal scattering data into ACE-TSL format. The results are to be presented at the coming meeting.

Validation of the self-shielding methods is important for all nuclear applications and especially for deep penetration problems. An experiment was performed recently at RPI measuring the transmission through a thick Ta target. The usefulness of this experiment for validating the self-shielding methods is to be discussed.

## Presentations

#	Author	Title	Link
1	A. Trkov	Current Achievements of the Code Verification Project for Generating ACE Libraries	<a href="#">PDF</a>
2	A.Trkov	Comparison of results for ICSBEP benchmarks containing ZrH using TSL libraries for H in ZrH processed by different codes	<a href="#">PDF</a>
3	D. Lopez Aldama	Processing thermal scattering law and dosimetry files for Monte Carlo calculations using ACEMAKER	<a href="#">PDF</a>
4	K. Tada	Treatment of thermal scattering law data in FRENDY	<a href="#">PDF</a>
5	V. Sinitza	Capabilities of the GRUCON code package in the TSL data processing	<a href="#">PDF</a>
6	D.H. Kim	TSL Data Processing for MCNP in KAERI	<a href="#">PDF</a>
7	D. Brown, et al.	Fitting the cross-section probability tables	<a href="#">PDF</a>
8	C.M. Mattoon	TNSL and URR improvements in FUDGE	<a href="#">PDF</a>
9	Tiejun Zu	Treatment of thermal scattering law data in the nuclear data processing code NECP Atlas	<a href="#">PDF</a>
10	Y. Danon	URR measurements, evaluation, and testing for tantalum	<a href="#">PDF</a>

11	C. Jeannesson	Investigation of some Points of Methodology in the Unresolved Resonance Range Processing	<a href="#">PDF</a>
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# IAEA Technical Meeting on Nuclear Data Processing

18-22 October 2021

Virtual Event

## PRELIMINARY AGENDA

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### Monday 18 October (starting 2pm, open 1:45pm Vienna time)

2:00 – 2:05	Opening of the meeting
2:05 – 2:15	Election of Chair and Rapporteur(s), discussion of Agenda
2:15 –	Welcome, Andrej Trkov (IJS, Slovenia)
	Andrej Trkov: “Current achievements of the code verification project for generating ACE libraries”
<i>Short break</i>	
	Daniel L. Aldama: “Processing thermal scattering law and dosimetry files for Monte Carlo calculations using ACEMAKER”
	Kenichi Tada (JAEA): “Treatment of thermal scattering law data in FRENDY”
	Valentin Sinita “Capabilities of the GRUCON code package in the TSL data processing”

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### Tuesday 19 October (starting 2pm, open 1:45pm Vienna time)

2:00 –	Do Heon Kim: “TSL Data Processing for MCNP in KAERI”
	Caleb Matoon: “TNSL and URR improvements in FUDGE”
	Tiejun Zu: “Processing method of thermal scattering law data in the nuclear data processing code NECP-Atlas”
	Wim Haeck: “ACE format development at LANL: mixed mode thermal scattering and the ACEtk toolkit”

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### Wednesday 20 October (starting 2pm, open 1:45pm Vienna time)

2:00 – 2:	Yaron Danon: “Transmission measurements on thick targets for the validation of the self-shielded cross section”
	Cederic Jouanne/Clément Jeannesson: Title to be provided
	Andrej Trkov: “Proposal for the validation of self-shielding methods in the unresolved resonance range”
	Dave Brown: “Fitting the cross-section probability tables”
	Discussion on the self-shielding benchmark

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### Thursday 21 October (starting 2pm, open 1:45pm Vienna time)

2:00 – 2:	Discussion on ACE data processing
	Initial Drafting of the Meeting Summary report

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