

# Memorandum

**To:** Dr. Angela Chambers, Nuclear

Criticality Safety Program Manager,

National Nuclear Security Administration / NA-ESH-21

From: Joetta Goda, LANL NCSP Task

Manager, MS B228

Thanos Stamatopoulos, P-3, MS H805

**Symbol:** NEN-2:23-030 **Date:** June 30, 2023

Subject: Report on Foreign Travel to Aix-en-Provence, France for participation in the 6<sup>th</sup> International Workshop on Nuclear Data Evaluation for Reactor Applications (WONDER-2023)

# **Meeting Details**

Attendees on behalf of NCSP from LANL

Thanos Stamatopoulos

## Meeting Title

6th edition of the International Workshop On Nuclear Data Evaluation for Reactor Applications (WONDER-2023), organized by CEA IRESNE with the help of the CEA Cadarache center.

#### Meeting Location

Aquabella Hotel, 2 rue des étuves, 13100 Aix-en-Provence, France

#### Meeting Dates

June 5th -9th, 2023

## Meeting Objective

This workshop is the continuation of a series of workshops held in 2006, 2009, 2012, 2015, and 2018. The main objective of the workshop is to review the current modeling and evaluation methods of nuclear data for reactor applications (operational and future nuclear installations) and to debate possible areas of improvement.

### **Purpose of Travel**

Attendee from Los Alamos National Laboratory traveled from the US to France to attend the workshop in person.

Thanos Stamatopoulos presented as the PI of the <sup>149</sup>Sm(n,tot) measurement at LANL, the latest results from the combined (n,tot) and (n,g) R-Matrix analysis on <sup>149</sup>Sm.



## **Meeting Benefits to the NCSP**

The conference allowed the attendee to:

- i. Advertise the capability that is available at LANL/LANSCE to perform (n,tot) and (n,g) experiments in small amounts of materials relevant to NSCP
- ii. Showcase the unique methodology developed at LANL to extract resonance spins, which is important in evaluations.
- iii. Gather information on important measurements that need to be executed relevant to reactor applications.
- iv. Foster collaborations between LANL and international institutions, as described in the USDOE NCSP Mission and Vision, Five-Year Execution Plan.
- v. Publish the presented work in peer-reviewed journal.
- vi. Recruit early career professionals.

## **Meeting Summary**

The workshop focused on nuclear data needs for reactor applications, microscopic and integral nuclear data measurements, evaluation of nuclear data including theories, models and codes, uncertainties and covariance matrices and their impact on reactor calculations, processing and benchmarking, thermal scattering laws, decay data and fission including prompt particle emission and fission yields. A visit to the CEA Cadarache Center was included.

#### Side meetings

Thanos Stamatopoulos met with the following participants:

- i. Gilles Noguere of CEA Cadarache, France. A fruitful discussion took place on the resonance analysis of the <sup>147/149</sup>Sm data that were presented in the workshop. The interesting findings of the analysis were discussed thoroughly, and useful advice and creative ideas were proposed to test the analysis procedure.
- ii. Gilles Noguere of CEA Cadarache. A potential collaboration was discussed concerning the study of <sup>239</sup>Pu and the data evaluation to follow since CEA Cadarache is planning a measurement of <sup>239</sup>Pu samples at the Gelina facility in JRC-Geel and LANL will perform a measurement of <sup>239</sup>Pu in the coming few months.
- iii. Nacho Duran of Universidad de Santiago de Compostela, Spain. A discussion on an evaluation on the recent <sup>233</sup>U data taken with the DANCE instrument and funded by NCSP took place. The evaluator showed interest in performing an evaluation in the near future and technical details were discussed on the data analysis and taking.
- iv. Carlos Paradela of JRC-Geel, Belgium. JRC-Geel performed an evaluation on <sup>95</sup>Mo and published it a few months ago. LANL published a paper on new <sup>95</sup>Mo resonance parameters that was funded by NCSP a few months ago. The JRC-Geel work shows discrepancies with the LANL data. Unfortunately, JRC performed the work before LANL published the data. A re-evaluation was discussed.



- v. Carlos Paradela of JRC-Geel, Belgium. JRC-Geel is the owner of an R-Matrix code similar to SAMMY, that provides additional modeling. The process of getting the code in addition to training was discussed.
- vi. Sotiris Chasapoglou of NTU Athens, Greece. Sotiris is a high-class senior PhD student in neutron physics and will graduate in December. Possible postdoctoral projects, relevant to NSCP were discussed.

Attachment(s): Workshop timetable

Copy: Doug Bowen, ORNL, <u>bowendg@ornl.gov</u>
John Miller, SNL, <u>millerj@sandia.gov</u>
Marsha Henley, ORNL, <u>henleym@ornl.gov</u>
Johnna Marlow, LANL, <u>jmarlow@lanl.gov</u>



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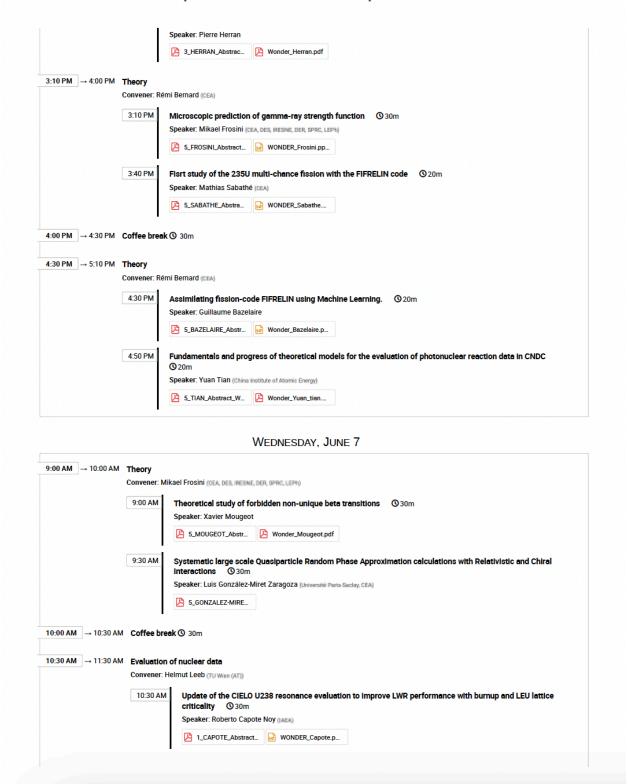






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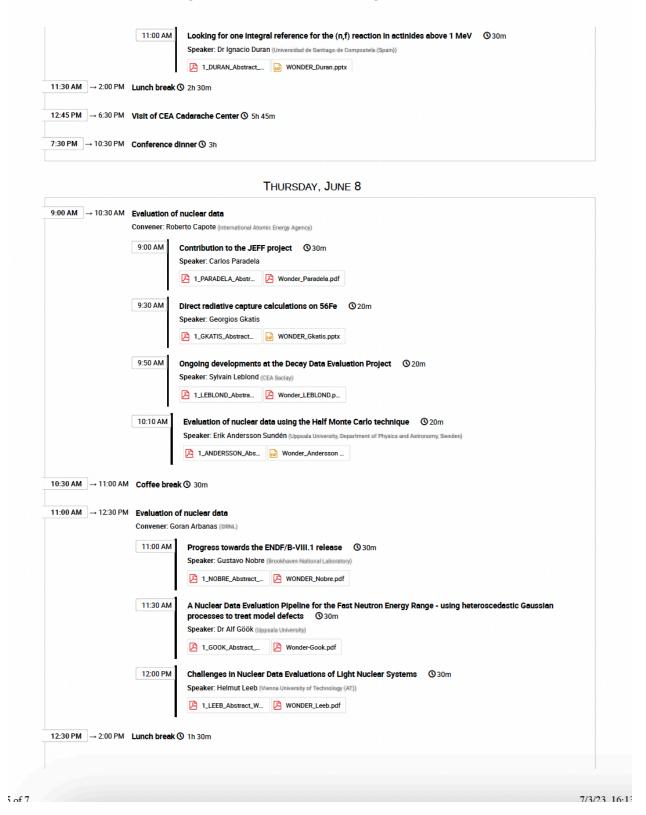


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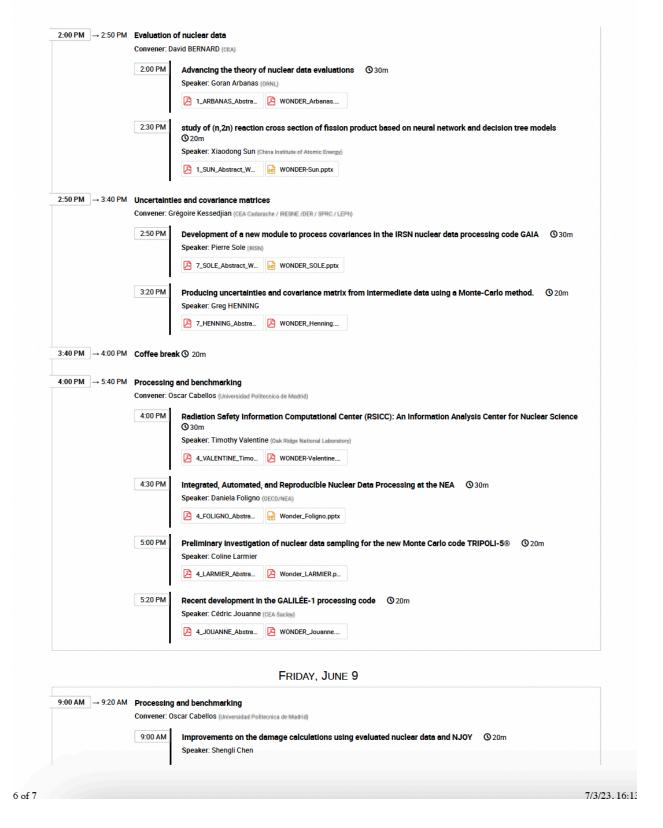
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