# ICTP-IAEA Workshop on Simulation of Nuclear Reaction Data with the TALYS Code (version October 5, 2023)

## Lecturers

Dimitri Rochman, PSI, Villigen, Switzerland

Stephan Pomp, Univ. Uppsala, Sweden

Stephane Goriely, Univ. Libre Brussels, Belgium

Stephane Hilaire, CEA-Dam, Bruyeres-le-Chatel, France

Arjan Koning, IAEA, Vienna, Austria

## Preliminary agenda

Notes:

* One day has 4 slots of 1.5 hours. We start at 9 am. I opted for a 1.5 hour lunch break instead of 2 hours so we can stop at 17.30.
* Since we are with 5, the maximum material we need to cover is 1 day per person. i.e. 4 slots of 1.5 hours per person. However, this will be reduced since we probably have 2 half-days of presentations by participants, there will be computer exercises, and we may want to stop Friday mid-afternoon (around 3.30 or so) for practical reasons, which I still need to confirm. Perhaps it is safe to assume that we have 3.5 full days of lectures by the 5 of us. That is 21 hours and thus roughly 4 hours of presentation material per person.
* I gave you all tentative topic titles. Let me know if you want to change them, or even want to present something different altogether, or do a different exercise. **This is perfectly possible!** Of course, I have guessed topics for you for which I expect you already have presentation material on the shelf.
* Regarding computer exercises I do not yet know what the situation is: we can’t expect everyone to have a laptop. I need to check what the current computer facilities are in Trieste, last time they had a computer room. A pre-installed version on the participants own laptop would of course enormously help. Other options would be, sometime before the conference (1 or 2 weeks) to transfer the software to Trieste so it can be installed on their Linux machines.

### Week 1: Nuclear reactions: experiments, models and codes

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|  | Mon Oct 16 | Tue Oct 17 | Wed Oct 18 | Thu Oct 19 | Fri Oct 20 |
| 09.00-10.30 | Koning | Pomp | Goriely | Hilaire | Goriely |
| 11.00-12.30 | Pomp | Hilaire | Rochman | Pomp | Rochman |
| 14.00-15.30 | Goriely | Participants | Participants | Rochman | Koning |
| 16.00-17.30 | Hilaire | Participants | Participants | Exercises | (Exercises) |

### Monday October 16, 2023:

09.00 – 09.10 Arjan Koning: Introduction to the Workshop

09.10 – 10.30 Arjan Koning: General overview and use of TALYS

10.30 – 11.00 Coffee break

11.00 – 12.30 Stephan Pomp: Nuclear data facilities and measurements I

12.30 – 14.00 Lunch break

14.00 – 15.30 Stephane Goriely: Nuclear structure ingredients for reaction models

15.30 – 16.00 Coffee break

16.00 – 17.30 Stephane Hilaire: Optical model and compound nucleus model

### Tuesday October 17, 2023:

09.00 – 10.30 Stephan Pomp: Nuclear data facilities and measurements II

10.30 – 11.00 Coffee break

11.00 – 12.30 Stephane Hilaire: Level densities and photon strength functions

12.30 – 14.00 Lunch break

14.00 – 15.30 Presentations by participants

15.30 – 16.00 Coffee break

16.00 – 17.30 Presentations by participants

### Wednesday October 18, 2023:

09.00 – 10.30 Stephane Goriely: Nuclear models for astrophysics I

10.30 – 11.00 Coffee break

11.00 – 12.30 Dimitri Rochman: Resonance parameters and related nuclear reactions

12.30 – 14.00 Lunch break

14.00 – 15.30 Presentations by participants

15.30 – 16.00 Coffee break

16.00 – 17.30 Presentations by participants

### Thursday October 19, 2023:

09.00 – 10.30 Stephane Hilaire: Fission

10.30 – 11.00 Coffee break

11.00 – 12.30 Stephan Pomp: Fission yields

12.30 – 14.00 Lunch break

14.00 – 15.30 Dimitri Rochman: TENDL nuclear data library and applications

15.30 – 16.00 Coffee break

16.00 – 17.30 Arjan Koning, Stephane Goriely, Stephane Hilaire: TALYS exercises

### Friday October 20, 2023:

09.00 – 10.30 Stephane Goriely: Nuclear models for astrophysics II

10.30 – 11.00 Coffee break

11.00 – 12.30 Dimitri Rochman: Nuclear data uncertainty quantification and propagation

12.30 – 14.00 Lunch break

14.00 – 15.30 Arjan Koning: Cross sections for medical isotope production + exercise

15.30 – 16.00 Coffee break

16.00 – 17.30 (TALYS exercises)