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ChETEC-INFRA 2nd General Assembly  
May 31 to June 1, 2022  
Palazzo della Salute, Padova (Italy)

# WP 7 HIGHLIGHTS

## Nuclear Astrophysics

## Scientific Schools

Konrad Schmidt



# Involved institutions

- Grand Accélérateur National d'Ions Lourds, France
- Helmholtz-Zentrum Dresden-Rossendorf, Germany
- Horia Hulubei National Institute for Physics & Nuclear Engineering, Romania
- Hubert Curien Pluridisciplinary Institute, France
- Kore University of Enna, Italy
- Laboratori Nazionali del Sud, Italy
- Max Planck Institute for Astronomy Heidelberg, Germany
- University of Frankfurt, Germany
- University of Milan, Italy
- University of Oslo, Norway
- University of Padua, Italy
- University of Perugia, Italy
- University of Strasbourg, France
- Uppsala University, Sweden
- Vilnius University, Lithuania



UNIVERSITÀ DEGLI STUDI DI ENNA "KORE"



UNIVERSITÀ DEGLI STUDI DI MILANO



UiO : University of Oslo



UNIVERSITÀ DEGLI STUDI DI PADOVA



UNIVERSITÀ DEGLI STUDI DI PERUGIA



UPPSALA UNIVERSITET



Vilniaus universitetas



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# Partner schools of ChETEC-INFRA

## Well established schools

- Carpathian Summer School of Physics
- European Summer School on Experimental Nuclear Astrophysics
- International school on nuclear physics, neutron physics and applications
- Rußbach School on Nuclear Astrophysics



# Carpathian Summer School of Physics

CSSP 2020  
August 18-27 2021, Sinaia

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## CARPATHIAN SUMMER SCHOOL OF PHYSICS 2020

The CSSP2020 was postponed. **Now we rescheduled it for August 18-27, 2021.** Concerns related to the coronavirus disease (COVID-19), are lower now and the situation is more relaxed in Romania and most of Europe. Please read below and **register** if you are interested

### Committees

#### International Advisory Committee:

T. Aumann (Darmstadt)	A. Mackova (Prague)
C. Bertulani (Commerce, TX)	N. Marginean (Bucharest)
M. El Eid (Beirut)	T. Motobayashi (Tokyo)
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J. Jose (Barcelona)	Ch. Scheidenberger (Giessen)
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T. Kajino (Tokyo)	O. Sorlin (Caen)
K.H. Kampert (Wuppertal)	C. Spitaleri (Catania)
K.-L. Kratz (Mainz)	H.-A. Synal (Zurich)
W. Kutschera (Vienna)	M. Wiescher (Notre Dame)
K. Langanke (Darmstadt)	S.J. Yennello (College Station)

#### Organizing Committee:

*Chairs:* Livius Trache, Mihai Straticu

*Scientific secretary:* Alexandra Spiridon

*Members:* Alexandra Saftoiu, Dan Filipescu, Denisa Cranganu, Laurentiu Serban

#### Organized by



"Horia Hulubei" National  
Institute for Physics and  
Nuclear Engineering,  
Bucharest, Romania

#### Latest News



JUN 09, 2021

**1<sup>st</sup> Circular is now available**

Find out the first information about the CSSP20 School.

82 participants  
(50 students)  
34 hours lectures

# Rußbach School on Nuclear Astrophysics



17th Rußbach School on Nuclear Astrophysics

13–19 Mar 2022  
Hotel Gasthof Waldwirt  
Europe/Vienna timezone

Enter your search term

41 participants  
(28 students)  
43 talks

## Overview

Program  
Timetable  
Contribution List  
Speaker List  
Registration  
Participant List  
Getting to Rußbach  
Information regarding  
COVID-19

## Contact

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✉ [konrad.schmidt@hzdr.de](mailto:konrad.schmidt@hzdr.de)  
✉ [sara.palmerini@pg.infn.it](mailto:sara.palmerini@pg.infn.it)

We announce that the **17th Rußbach School on Nuclear Astrophysics** will again take place at the village of Rußbach am Paß Gschütt, southeast of Salzburg, Austria. The school dates will be from **March 13 (arrival and registration) to March 19 (departure)** 2022. This school partners with **CHETEC-INFRA**, **Chemical Elements as Tracers of the Evolution of the Cosmos - INFRA** structures for Nuclear Astrophysics, a new European starting community of 32 partner institutions and belongs to the European Network of Nuclear Astrophysics Schools (ENNAS). We shall limit the number of participants to about 60 to ensure a convivial atmosphere, and the possibility to share dinners between all participants.

In keeping with its tradition, the school will bring together specialists from the various sub-fields of **astrophysics, astronomy, cosmochemistry and nuclear physics** with the aim to raise mutual interest and to teach under- and postgraduate students, young post-docs as well as senior scientists interested to be introduced to nuclear astrophysics. The school will be organized in major topical sessions, with dedicated lecture time for basic introduction, presentations of the various aspects of the topic, and ample time for discussions and out-door activities in the Dachstein West mountain region.

Students and young researchers are **highly** encouraged to give oral presentations. The websites for previous schools, for those interested in seeing a historical overview of some of our previous lecturers, can be found at the following links:



# European Summer School on Experimental Nuclear Astrophysics

## The 11th European Summer School on Experimental Nuclear Astrophysics

Jun 12 – 19, 2022  
Europe/Rome timezone

Enter your search term 

### Overview

[School Poster](#)

[Public Lecture](#)

[Second Announcement](#)

[Scientific Programme](#)

[Participant List](#)

[Registration](#)

[Social Activities](#)

[Hotel booking and  
Registration fee Payment](#)

### Support

 [astro2022@lns.infn.it](mailto:astro2022@lns.infn.it)

 [rgpizzone@lns.infn.it](mailto:rgpizzone@lns.infn.it)

 [llamia@lns.infn.it](mailto:llamia@lns.infn.it)



We have the pleasure to announce the **11th European Summer School on Experimental Nuclear Astrophysics (Santa Tecla School)**, devoted to the education of young Ph.D. students and young researchers. The school belongs to the European Network of Nuclear Astrophysics Schools (ENNAS), a network made by the European schools on nuclear astrophysics and related areas (the Santa Tecla, the Sinaia, the Russbach school), having the common effort of preparing and educating young physicists in nuclear physics, astrophysics and their mutual relationship in the nuclear astrophysics field.

For such a reason, the school will deal with both various astrophysical issues, ranging from primordial nucleosynthesis to stellar evolution, and nuclear topics, including novel experimental approaches, radioactive ion beams, and indirect methods. The lectures of the school will be given by high-quality level scientists, selected for their didactical skills. The lectures are scheduled in plenary morning and afternoon sessions. In the spirit of the school, large room will be given to young researcher oral contributions. Specific sessions will be allocated to allow them to present their latest scientific results.

The school is hosted in the conference hall of the INFN LNS in Catania.

The school is supported by the INFN LNS, Dipartimento di Fisica e Astronomia "E. Majorana" (DFA-UniCT) of Catania, Chetec-INFRAIA and Centro Siciliano di Fisica Nucleare e Struttura della Materia (CSFNSM).



# Partner schools of ChETEC-INFRA

## Well established schools

- Carpathian Summer School of Physics
- European Summer School on Experimental Nuclear Astrophysics
- International school on nuclear physics, neutron physics and applications
- Rußbach School on Nuclear Astrophysics



# Partner schools of ChETEC-INFRA

## New schools

- Intercontinental School on Nuclear Astrophysics
- Nuclear Physics in Astrophysics School
- School on observations and spectroscopic tools
- **SNAQs**  
**Schools on Nuclear Astrophysics Questions**

## Well established schools

- Carpathian Summer School of Physics
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# Nuclear Physics in Astrophysics School



Nuclear Physics in Astrophysics X School

29 August 2022 to 3 September 2022  
CERN, Geneva, Switzerland  
Europe/Zurich timezone

Enter your search term

Registration is open until 30 June 2022.

Overview

Timetable

Registration

1st Circular

COVID info

Participant List

Organizing Committee

International Conference  
on Nuclear Physics in  
Astrophysics X

Contact

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✉ [a.c.larsen@fys.uio.no](mailto:a.c.larsen@fys.uio.no)



Nuclear Physics in Astrophysics is an exciting field with many highlights in recent years in observational astronomy, simulating astrophysics, experimental and theoretical nuclear physics. Therefore, training and interaction of young scientists, PhD students and postdocs, are important for further progress and expansion of this community.

We are organizing a Summer School on "Nuclear Physics in Astrophysics" in connection to the International Conference on [Nuclear Physics in Astrophysics X](#). It will be held at [CERN, Geneva, Switzerland](#) from August 29 to September 3, 2022.

## Nuclear Physics in Astrophysics - X

Topics will cover the different aspects of Nuclear Physics and Astrophysics from nuclear structure theory to nuclear ground and excited state properties and experimental studies. Nuclear physics is the necessary link between astronomical observations, stellar models and galactic chemical evolution. The impressive progress in astrophysics during the last decades explaining and predicting astronomical scenarios was only possible because of the fruitful interplay between all disciplines. New insights in one field triggered new developments in the other fields. New experimental techniques are typically the response to new predictions and observations. Recent success stories involve exotic objects like merging neutron stars, more abundant red giants or even rather ordinary stars as the Sun.

Highlights of the school include:

- Observation night with the world-class [Nordic Optical Telescope](#) sponsored by [ChETEC-INFRA](#)
- Hands-on day with the galactic chemical evolution code [OMEGA](#)
- Training day for Nuclear Astrophysics Masterclasses

[ChETEC-INFRA](#), [ChETEC-INFRA](#) will provide financial support to 20 selected students, partially covering local costs (i.e., meals and accommodation).

Moreover, via the global network of networks, [IReNA](#) will provide financial support to USA students.



Application deadline  
June 30, 2022



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concept



# ChETEC-INFRA SNAQs ['snæks]

## Schools on Nuclear Astrophysics Questions

A new event of **SNAQs** is organized always on the 2nd Wednesday in each month with a break in summer. **SNAQs** last about 3.5 hours, including breaks, with lectures and scientific talks around a given question in nuclear astrophysics. Lectures are held by senior researchers and scientific talks preferably by young researchers, as master and PhD students. Further, **SNAQs** put a special focus on the interaction between participants to allow young scientists networking even if traveling to schools, workshops and conferences is not an option.

**SNAQs** join the community of schools related to nuclear astrophysics that partner with **ChETEC-INFRA**:

- [Carpathian Summer School of Physics](#) (well established)
- [European Summer School on Experimental Nuclear Astrophysics](#) (well established)
- Intercontinental School on Nuclear Astrophysics (new)
- [International school on nuclear physics, neutron physics and applications](#) (well established)
- [Nuclear Physics in Astrophysics School](#) (new)
- [Rußbach School on Nuclear Astrophysics](#) (well established)
- School on observations and spectroscopic tools (new)

The aim of this community is to give all students and young researchers the same, multidisciplinary knowledge about nuclear astrophysics. **SNAQs** will support this idea and strengthen the community of schools by providing a frequent lecture series to train and educate the next generation of scientist with knowledge across the three types of [infrastructures](#) used by nuclear astrophysicists:

- Astronuclear [laboratories](#) supplying reaction data,
- [Supercomputer](#) facilities performing stellar structure and nucleosynthesis computations, and
- [Telescopes](#) and [mass spectrometers](#) collecting elemental and isotopic abundance data.

# SNAQs organizing committee



Rosanna **Depalo**, Università degli Studi di Milano,  
Italy



Marcel **Heine**, Hubert Curien Pluridisciplinary  
Institute, France



Andreas **Korn**, Uppsala University, Sweden



Sara **Palmerini**, University of Perugia, Italy



Konrad **Schmidt** (chair), Helmholtz-Zentrum  
Dresden-Rossendorf, Germany



Livius **Trache**, Horia Hulubei National Institute  
for Physics & Nuclear Engineering, Romania



Camilla Juul **Hansen**, TU Darmstadt, Germany



Ann-Cecilie **Larsen**, University of Oslo, Norway



Arūnas **Kučinskas**, Vilnius University, Lithuania



Gianluca **Pizzone**, Laboratori Nazionali del Sud,  
Italy

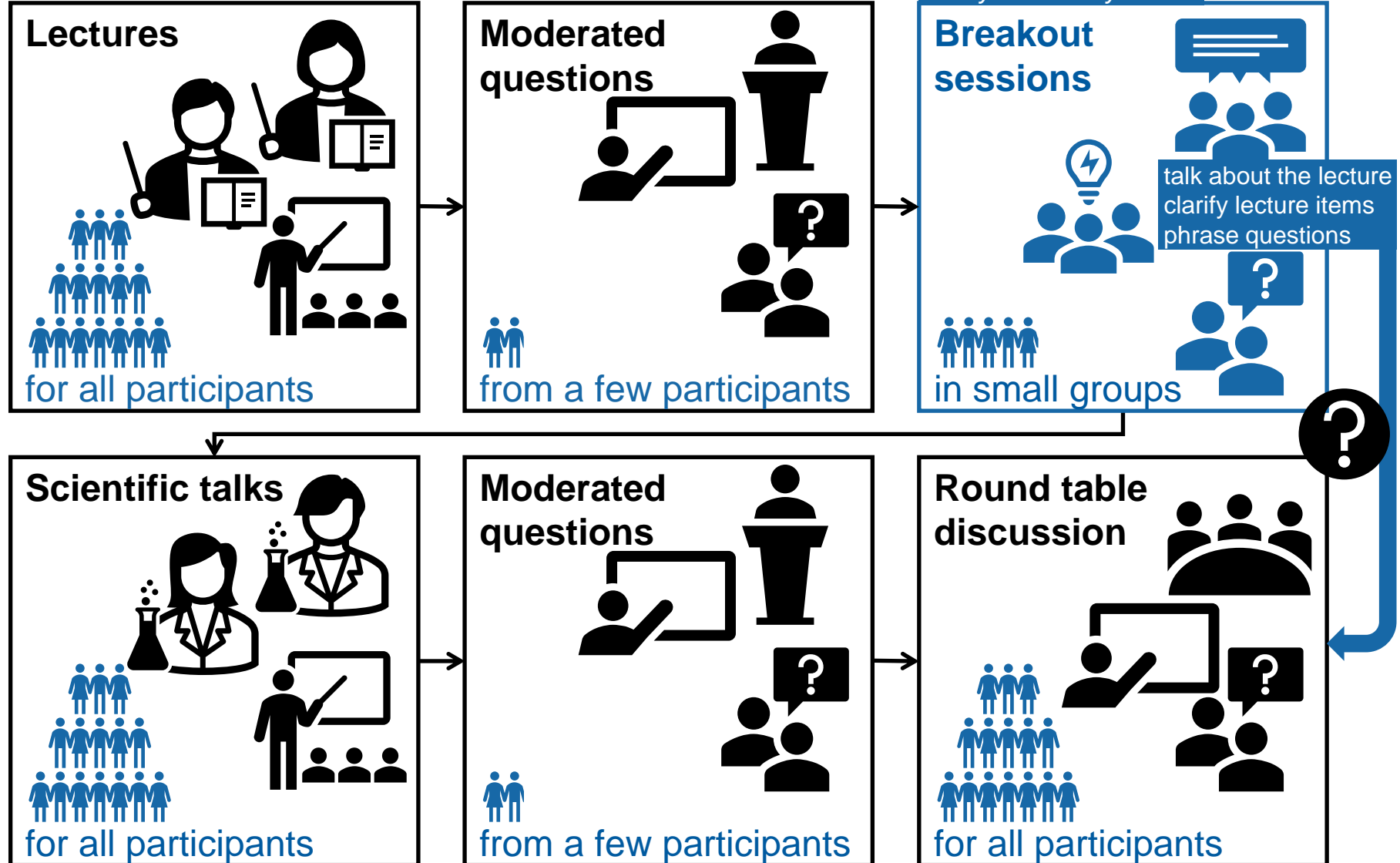


Olivier **Sorlin**, Grand Accélérateur National d'Ions  
 Lourds, France







Aurora **Tumino**, Kore University of Enna, Italy

# Typical SNAQs agenda



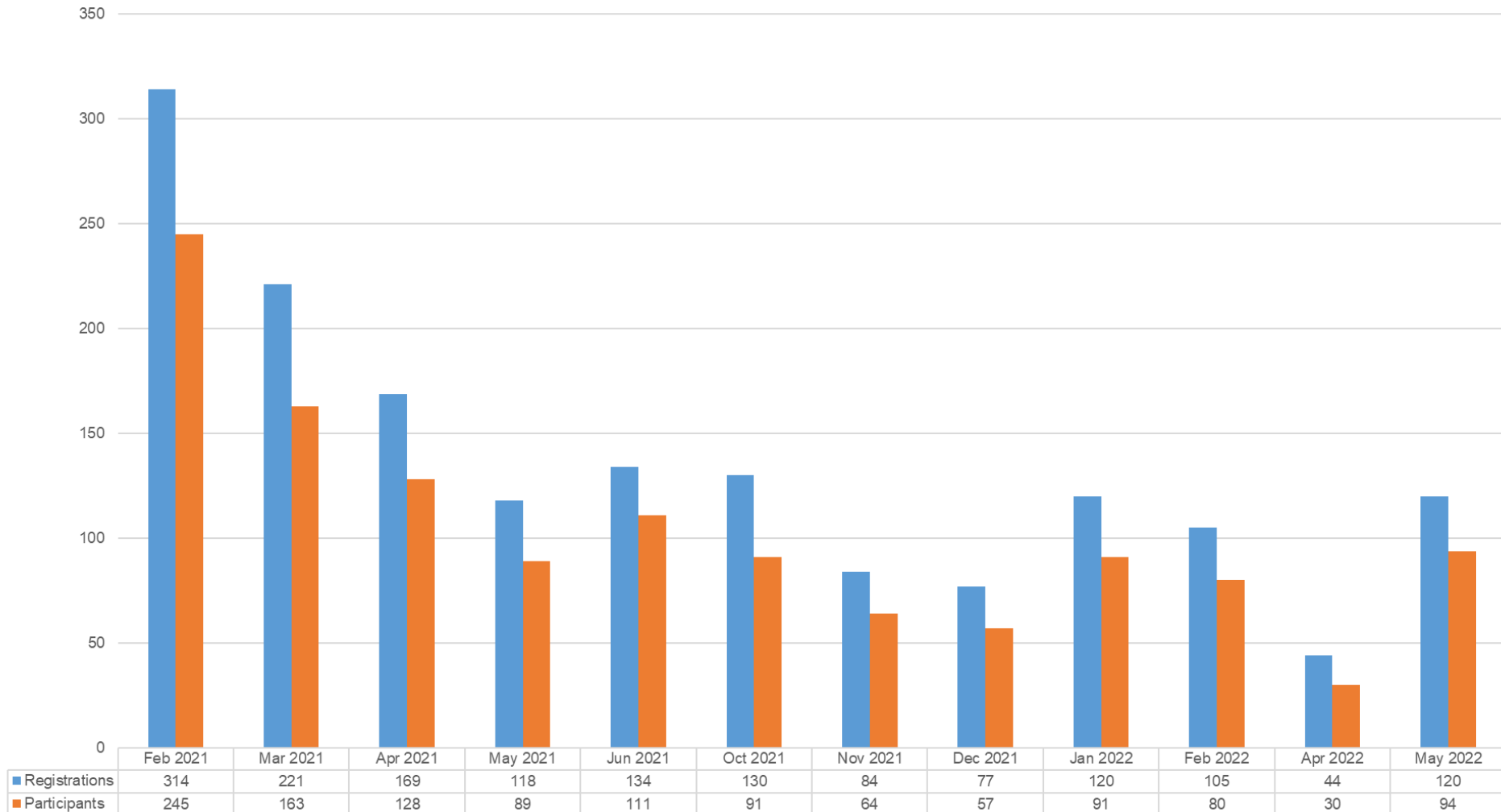
# First editions of SNAQs

 <p>Accurate abundances of chemical elements in stars: why and how?</p> <p>May 2022</p> <p>on indico</p>	 <p>Why is attracting high school students to nuclear astrophysics a win-win for everyone?</p> <p>April 2022</p> <p>on indico</p>	 <p>How to model a star in your laptop?</p> <p>February 2022</p> <p>on indico</p>	 <p>What is the link between radioactive nuclei and astrophysics?</p> <p>January 2022</p> <p>on indico</p>
 <p>Does Nuclear Astrophysics probe fundamental physics?</p> <p>December 2021</p> <p>on indico</p>	 <p>How to interpret stellar spectra?</p> <p>November 2021</p> <p>on indico</p>	 <p>How to study stars from underground laboratories and deep-sea samples?</p> <p>October 2021</p> <p>on indico</p>	 <p>What does nuclear physics do for astrophysics?</p> <p>June 2021</p> <p>on indico</p>
 <p>How can we query nature to determine nuclear inputs in the cosmos?</p> <p>May 2021</p> <p>on indico</p>	 <p>How to get from starlight to stellar abundances?</p> <p>April 2021</p> <p>on indico</p>	 <p>How do neutron star mergers impact r elements in the universe?</p> <p>March 2021</p> <p>on indico</p>	 <p>What do we need to know about nuclear astrophysics?</p> <p>February 2021</p> <p>on indico</p>

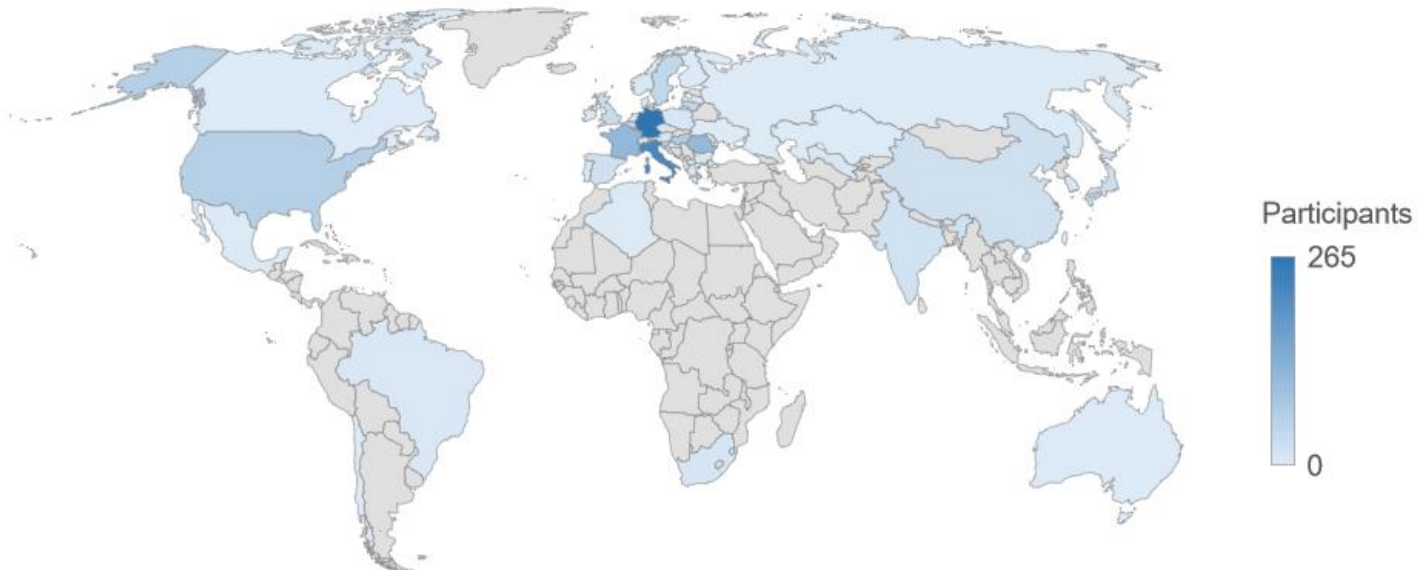
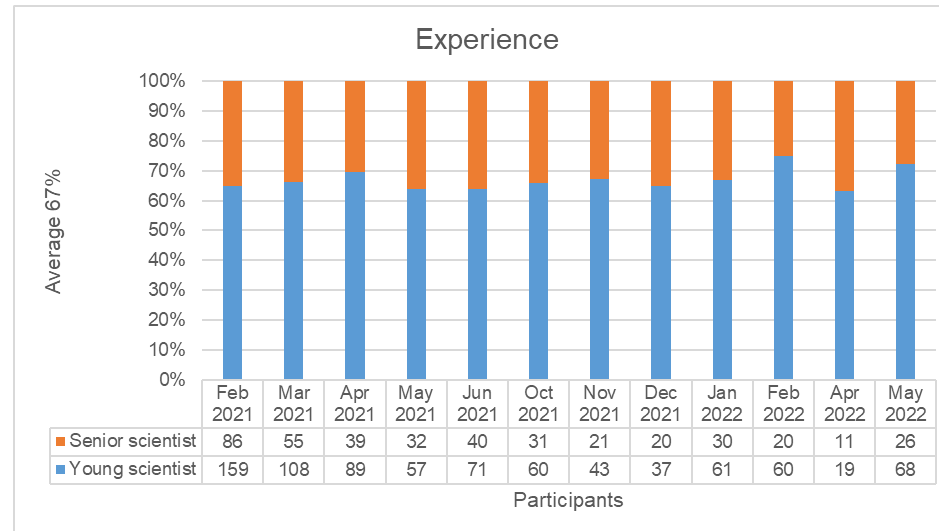
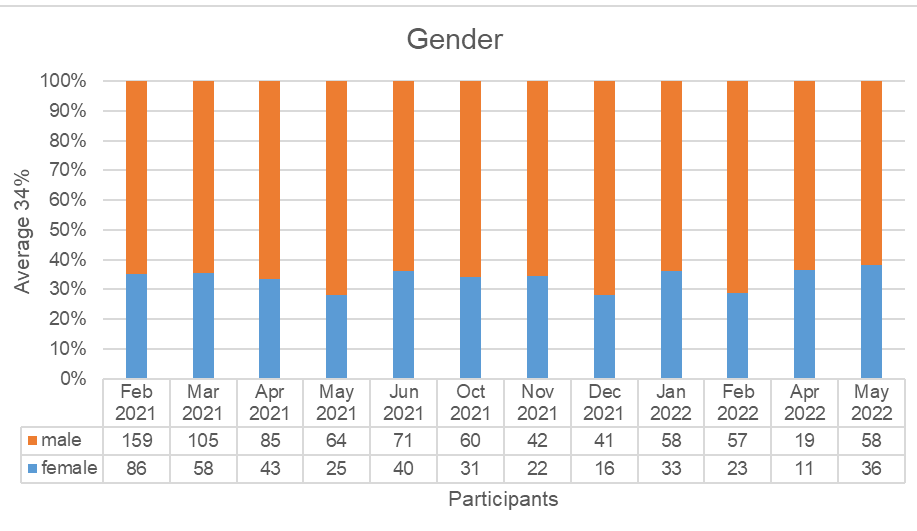


# SNAQs stats – registrations and participants

Accumulated sums: 1636 registrations and 1243 participants



# SNAQs stats – gender, experience, and origins



# Summary

## New schools

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