



SNAQ8: Nuclear Astrophysics probing fundamental physics

From the organizers of the
Carpathian Summer Schools of Physics

Zoom – December 8th, 2021

Carpathian Summer Schools of Physics

- 29 editions since 1964 in the Carpathian Mts: Predeal, Poiana Brasov, Sinaia
- Starting 2005: 8 editions focus on nuclei, nuclear and particle astrophysics

Exotic Nuclei and Nuclear/Particle Astrophysics Physics with small accelerators

- Part of the European Network of Nuclear Astrophysics Schools (ENNAS):
 - CSSP: Carpathian SSP, Sinaia, Romania
 - ESSENA: European Summer School of Experimental Nuclear Astrophysics, Catania, Italy
 - RWNA: Russbach Workshop on NA, Austria
- On the ChETEC-INFRA list of NA schools, ENSAR2, endorsed by EPS, etc...

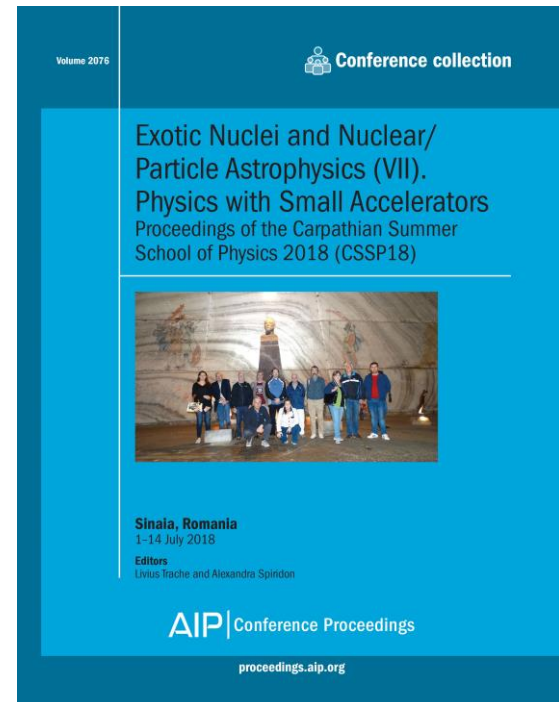
Some info: school and conference format, 2 weeks

Biennial, CSSP20: the 29th edition

Past 7 editions: 100-120 participants, ~ 55 lecturers

Proceedings published with AIP; latest:

<https://aip.scitation.org/toc/apc/2076/1> (Open Access)



CSSP20

Carpathian Summer School of Physics 2020

Exotic Nuclei and Nuclear/Particle Astrophysics (VIII). Physics with small accelerators

Planned for July 2020, in Sinaia, Romania

- Postponed for 2021
- Dec. 20, 2020 – announced IAC that we'll do it!
- June 2021– got first 2 lecturers committed + some promises; IAC encouraged us
- June 9th – launched it at SNAQ5 of ChETEC-INFRA (envisioning 20-30 participants)
- Sometime in July got (some) finances confirmed
- July – yes, we'll do it!
- August 2021 – in-person only meeting; we had >80 participants
- August 26, 2021 – closing without any negative issues

CSSP20 in numbers

9-10 days of hard work...

- Again >7 hrs a day!
- 81 participants
- 27 lectures, in 34 hrs
- 34 students' communications
- Outreach session on Saturday 21.08.2021
- More a SCHOOL than before!

... And some fun

- Festive dinner with music - tonight
- Excursions – private ?!
- Football game: Romania vs. Rest of the World 0 – 4
- Basketball, laser tag, bowling, pool, etc...
- Dinners and evenings spent together

The science of CSSP20

Same HUGE ranges

Space: $<10^{-15}$ m to $2 \times 14B$ [light years](#)

Time: 10^{-23} s to 14B yrs

- **Exotic Nuclei and states:** models, γ -ray spectroscopy, nuclear matter, transfer reactions, breakup, RIB, ...
- **Nuclear Astrophysics:** nuclear physics for astrophysics, modeling, nucleosynthesis processes, stellar evolution, direct and indirect methods, observations ...
- **Particle Astrophysics** (astroparticles): H(ighest)EPP, radio antennas, big observatories: P. AUGER Obs.
- **ELI-NP session + NP with lasers**
- **Physics with small accelerators:** Ion Beam Analyses, AMS, NPA
- **School's round table:**
 1. Horia Hulubei 125 and 65 years of institutional nuclear physics in Romania
 2. Science and scientific meetings in time of crisis



Sponsors:

- ENSAR2 and its NuSPRASEN work package – thanks to profs. Ch. Scheidenberger, Zs. Fulop and Muhsin Harakeh
- **Your institutions** that supported you: students and lecturers!
- Support of IFIN-HH management
- **Support of lecturers** who committed to come, came and helped, gave support and made the school visible and a success!
- Support of ChETEC-INFRA groups to spread the news!

Thanks to the Organizing Committee:

Alexandra Spiridon – scientific secretary – did all work

Alexandra Saftoiu, Dan Filipescu

Denisa Cringanu, Sanda Olteanu, Laurentiu Serban (webmeister)

Future

From discussions with ENNAS partners

With ChETEC-INFRA support:

- Next ESSENA school of Catania – in June 2022
- Carpathian schools in odd years => in 2023!
 - Q: Sinaia again?! Organizers?!
- Russbach remains in each winter => March 2022

See you at next school: CSSP23 !!!



Dec. 8, 2021

L. Trache SNAQ8

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