



Carpathian Summer School of Physics 2016

Exotic Nuclei and Nuclear/Particle Astrophysics (VI).

Physics with small accelerators

June 26 – July 9, 2016, Sinaia, Romania

Third and last circular

General information

This is the third circular to give the last details to the participants to the **Carpathian Summer School of Physics 2016**, June 26 - July 9, 2016, in Sinaia, Romania. This circular repeats the basic information released in the previous circulars and contains news and updates.

The title of the event is:

**"Exotic Nuclei and Nuclear/Particle Astrophysics (VI).
Physics with small accelerators"**

and is part of ENNAS (European Network of Nuclear Astrophysics Schools, with St. Tecla and Russbach. We created a stable network of periodic events that respond to the need of preparing and educating the younger generations of physicists in the cross disciplinary fields of nuclear physics and astrophysics through lectures and meetings with some of the best active scientists. This year we add additional flavor through the subjects related to physics with small accelerators, fundamental or applied research.

We use the format of the latest editions: the **first week** of the event will be closer to a **school-like format**. It will be aimed at graduate students, post-docs and young researchers. About 60 students from the host country, the surrounding regions and many other countries on 4 continents registered to attend. The **second week** will have a **conference-like format**, with 1 hour invited lectures. The goal of the first week is to have lectures from some of the best specialists in the fields announced that would prepare the students for the second part. **Students and young researchers will give 20 min. short communications**. We also intend to bring to this audience news about ELI-NP, the newest and most important scientific project that happens in the host country and the region, through dedicated sessions on Thursday – Friday, June 30th – July 1st.

Organizer

"Horia Hulubei" National Institute for Physics and Nuclear Engineering (IFIN-HH) Bucharest

Topics include, but are not restricted to:

- *Exotic nuclei*
- *Nuclear physics with RIBs*
- *Nuclear physics for astrophysics*
- *Stellar evolution. Compact stars and supernovae*
- *Astroparticle physics*
- *Stellar and laser induced plasmas*
- *Physics at ELI-NP*
- *Applications at small accelerators*
- *Nuclear astrophysics with small accelerators*
- *Instrumentation*
- *Accelerators for medical treatments, radioisotope production and industrial applications*

International Advisory Committee:

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H.-A. Synal (Zurich)

G. V. Trubnikov (Dubna)

M. Wiescher (Notre Dame)

N. V. Zamfir (Bucharest)

Organizing Committee:

Livius Trache and Dan Gabriel Ghita: chairs

Dan Filipescu and Tiberiu Sava: scientific secretaries

Alexandra Chilug, Dana Tudor, Doru Pacesila, Adrian Rotaru : members

Invited lecturers:

V. Avrigeanu (Bucharest), D. Balabanski (Bucharest), V. Baran (Bucharest), A. vd Berg (Groningen), C. Bertulani (Texas A&M Commerce), S. Bishop (Munich), A. Bonasera (Catania), C. Borcea (Bucharest), I. Brancus (Bucharest), B. Constantinescu (Bucharest), R. Dabu (Bucharest), D. Delion (Bucharest), R. Diehl (Munich), M. El Eid (Beirut), Zs. Fulop (Debrecen), M. Gai (New Haven), S. Gales (Bucharest), C. Granja (Prague), M. Hass (Rehovot), A. Haungs (Karlsruhe), M. Horoi (CMU), M.G. Itkis (Dubna), A. Jokinen (Jyvaskyla), A. J. Jull (Tucson), K-H Kampert (Wuppertal), K-L Kratz (Mainz), W. Kutschera (Vienna), K. Langanke (Darmstadt), Bao An Li (Texas A&M Commerce), A. Mackova (Prague), B. Mitrica (Bucharest), I. Mocioiu (Penn State), T. Motobayashi (Tokyo), F. Negoita (Bucharest), D. Nicmorus (Darmstadt), N. Palincas (Bucharest), A. Petrovici (Bucharest), M. Petrovici (Bucharest), T. Sava (Bucharest), B. Sharkov (Darmstadt), S. Shlomo (Texas A&M), C. Spitaleri (Catania), C. Stan-Sion (Bucharest), D. Stutman (Bucharest), H-A Synal (Zurich), T. Szucs (Debrecen), O. Tesileanu (Bucharest), A. Tumino (Catania), P.J. Woods (Edinburgh) etc.

The invited talks will be 1 hour long, discussions and a 5 min break included. The oral presentations will be of 20 min, with 3 min included for discussions.

Special events

A special outreach session in a round table format is being planned for the **afternoon of Saturday July 2nd**. The subject proposed this year is:

“JINR Dubna at 60”

JINR Dubna representatives, scientists that work or are working at JINR, officials of the host country involved in the research policy and in the management of research and higher education, politicians and media representatives will join the CSSP16 participants in open discussions on the above subjects. The session will be followed by the school's banquet. Sunday July 3rd we plan the school excursion(s).

Venue, attractions

The conference will be held in **Sinaia**, a year-round mountain resort in the heart of the Carpathians, about 130 km north of Bucharest, about 1.5 hours drive from the main international airport of Romania. Sinaia is “the Pearl of the Carpathians”, a prime tourist attraction and in close proximity to many first class natural and historical attractions of Romania. Extra activities, from visiting the Sinaia monastery and the Peles Castle (with its beautiful art collection or the open-air folklore exhibit and market), to dinning and wining at restaurants with live Romanian and international music, to mountain climbing, are all available within walking distance. Visits to old Transylvanian cities, like Brasov, Sibiu and Sighisoara, or to the Bran castle (“Dracula's castle”) and Poiana Brasov, are possible by car, bus or train.

Accommodation

The venue of the school will be Hotel International**** (<http://www.international-sinaia.ro>), a four star conference complex, where most of the participants *will be accommodated in single and double rooms and in luxury flats at the following prices:*

Double room in single occupancy: 60 euro/day, about 270 lei (RON= Romanian currency),

Double room in double occupancy: 34 euro/ person/day, about 150 lei

Deluxe double room: 75 euro/day, about 340 lei

*There will be also a limited number of suites available [junior suite 83, executive junior suite 90 and one bedroom suite 125 euro/day, respectively.] These prices are offered **only** if the participants are registered **via the organizers**. **Do not register with the hotel directly!***

Breakfast is included in room's price.

Lunches will be served at the same hotel and are included in the fee.

Dinners can be pre-arranged at the same hotel at about 16 euro each, or the participants can chose to manage by themselves with these meals at other restaurants that are available around, in walking distance.

Travel

By plane to BUCHAREST. You can reach the Bucharest-Otopeni airport (OTP) (“Henri Coanda” International Airport) by one of the numerous flights that connect the Romanian capital with the major Europeans airports. OTP is close to Bucharest and on the highway to Sinaia at ~100 km.

From Bucharest to SINAIA:

Arrangements for airport transfer are offered to participants:

Participants who wanted assistance with transportation to/from Sinaia were asked to express this request and provide organizers with the exact dates/times of their arrival and departures. The cost will be 25 euro/way. If this assistance is confirmed by us, a driver will wait for you at the “Information” booth in front of the arrival gate.

Sunday June 26, two buses will leave from the airport at 15:00 and 19:00, respectively. Volunteers (young students from the host institute) will wait in the arrival area of the airport with placards showing the CSSP16 poster. Look for them if you want to board the buses.

Saturday July 9th buses will take the participants to the airport or to the city center in Bucharest.

On request special arrangements were made to transfer the lecturers that do not come from the beginning from the Airport to Sinaia and back.

By rental car. If you have reserved a car, or you want to rent one with the many agencies present in the airport, after you pick the car, you have to drive out of the airport complex, then turn right on **DNI (E60)** in direction Ploiesti-Brasov. After about 110 km you reach Sinaia. Hotel International is on your left hand side on str. Avram Iancu, corner with M. Kogalniceanu str.

By train: SINAIA is a major station on the main railway routes from West and Central Europe to Bucharest.

The schedule of trains **Bucuresti to Sinaia** is at <http://www.cfrcalatori.ro/> and below:

Station of departure	Departure time 26.06.2016	Arrival 26.06.2016	Duration	Type
Bucuresti Nord	06:00	07:37	1 h 37 min	IR 1745
Bucuresti Nord	06:23	08:55	2 h 32 min	R 3001
Bucuresti Nord	07:00	08:32	1 h 32 min	IR 1631
Bucuresti Nord	08:15	09:44	1 h 29 min	IR 1636
Bucuresti Nord	08:50	11:16	2 h 26 min	R 14031
Bucuresti Nord	10:00	11:39	1 h 39 min	IR 12221
Bucuresti Nord	11:45	13:57	2 h 12 min	R 14033
Bucuresti Nord	12:15	13:46	1 h 31 min	IR 1645
Bucuresti Nord	13:15	14:43	1 h 28 min	IR 1937
Bucuresti Nord	14:00	15:23	1 h 23 min	IR 1347
Bucuresti Nord	14:15	16:38	2 h 23 min	R 3005
Bucuresti Nord	15:45	17:19	1 h 34 min	IR 1537
Bucuresti Nord	16:36	19:19	2 h 43 min	R 3007
Bucuresti Nord	16:45	18:25	1 h 40 min	IR 1633
Bucuresti Nord	17:23	19:52	2 h 29 min	R 14035
Bucuresti Nord	17:45	19:08	1 h 23 min	IR 472
Bucuresti Nord	18:00	19:40	1 h 40 min	IR 1643
Bucuresti Nord	18:45	20:18	1 h 33 min	IR 1741
Bucuresti Nord	20:16	22:32	2 h 16 min	R 11033
Bucuresti Nord	20:45	22:23	1 h 38 min	IR 1931
Bucuresti Nord	21:00	22:36	1 h 36 min	IR 1641
Bucuresti Nord	21:07	23:18	2 h 11 min	R 14037

If you arrive at the Bucharest (Otopeni) airport and do not have an arrangement for bus/car to Sinaia, you can take a **taxi** to the “Bucuresti Nord” railway station (ask the taxi-driver for “Gara de Nord”, ~15km and ~15 euros), then the train until Sinaia (~125 km). Or, you may take the **city bus no. 780** to Gara de Nord (you go down to the ground level at airport, buy a two-way ticket to town for 7 RON (<2 euro) and board buses circulating 5:20 to 23:05 with ~ 30 min frequency) to the end station.

Bus no 783, from the same location at the airport and same cost, takes you to the center of Bucharest. You can find more details [here](#).

At the train station in Sinaia you can pick a taxi (1-2 euro), or climb a flight of stairs from the station to the city level, then walk to your left for a few hundred meters to the hotel (which is going to be on your right).

Go to the website <http://cssp16.nipne.ro> for details about the transportation.

Registration

Registration is now closed.

A fee of **350 euro** for the two weeks stay and **200 euro** for one week will be charged covering the cost of lunches and coffee breaks and of the volume of the Proceedings for each participant. The organizers can assist with the transportation from and to the airports in Bucharest at a cost of **25 euro/person/trip**.

Stipends. As a rule, the participants are supported by their home institution. However, a limited number of fellowships were available for students (consisting of full or partial local support for 2 weeks, but no international transportation). The applicants were announced in due time about the fellowships granted.

Abstracts/papers. The proceedings of the conference will be published with an internationally recognized Publisher (AIP) at about 40 Euro/ printed volume. A booklet of abstracts will be made available at the beginning of the School from those submitted in time.

Program of the school (draft):

- **1st week June 27 – July 2**

Mon-Tue-Wed: Introductions and Physics with small accelerators

Tue is an AMS day. Lecturing: Kutschera, Synal, Stan-Sion, Sava, Palincas (archaeologist).

Tim Jull arrives Fri, will talk Saturday.

Thu – Fri: ELI-NP days

Sat: outreach sessions. Afternoon the subject of the round table is “JINR Dubna at 60”;

Banquet

Sun: excursion(s)

- **2-nd week: July 4-8**

Mon: Astroparticles and Large facilities

Tue-Fri: nuclear structure, nuclear astrophysics, astroparticles, etc...

Saturday: July 9th: departure

Useful information: *Sinaia* is at ~800 m altitude and the mountains around go to 2500 m. It is summer in June-July, but summer in the mountains! Temperatures may go to 30 C, and then down to 7 C. If you go on our website, click on “The venue” and at the lower right you’ll see the current temperature in Sinaia, courtesy our webmaster. A pullover and a rain coat will prove to be valuable. Hiking can be a very rewarding pass-time activity, and you’ll find trails from very easy to challenging in walking distance from the hotel. Prepare accordingly.

Currency: While many prices may be quoted in euros on websites, no, Romania is not yet in the euro zone. The local currency is called “leu” (plural “lei”), symbol RON. The exchange rate on June 21, 2016 was 1 euro=4.53 RON, 1 USD = 3.99 RON. Most of the ATM in Bucharest and Sinaia will accept the major credit/debit cards and will disburse lei. A few may be found that disburse euros or USD.

Contact:

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- Secretariat cssp16@nipne.ro

Up-to-date information on our website: <http://cssp16.nipne.ro> or <http://www.nipne.ro/cssp16>

Organized by:



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June 26 – July 9, 2016 Sinaia, Romania

***Exotic Nuclei and Nuclear/Particle Astrophysics (VI). From Nuclei to Stars.
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PROGRAM 1st week

	M o n d a y June 27-th	T u e s d a y June 28-th	Wednesday June 29-th	Thursday June 30-th	Friday July 1-st	Saturday July 2-th
	<i>Introductions</i> <i>Physics small accel (I)</i>	<i>AMS (I)</i>	Phys small accel (III)	<i>ELI-NP session</i>	<i>ELI-NP session</i>	<i>Outreach day</i>
	<i>Chair: Trache</i>	<i>Chair: Stan-Sion</i>	<i>Chair: Sava</i>	<i>Chair: Negoita</i>	<i>Chair: Gales</i>	<i>Chair:</i>
9:00 - 9:15	<i>O p e n i n g</i>	W. Kutschera	Z. Fulop	S. Gales	C. Matei	P.J. Woods
9:15 - 9:55	L. Trache					
9:55 - 10:50	M. Horoi	W. Kutschera	S. Tamas	R. Dabu	D. Balabanski	M.G. Itkis SHE
10:50-11:10	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>
11:10 – 12:00	A. Mackova	H.A. Synal	A. Jokinen	A. Bonasera	D. Filipescu	S. Bishop
12:00 - 12:50	B. Constantinescu	T. Sava	D. Delion	M. Boca	V. Baran	T. Jull
13-15	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch 12:30-13:30</i>
	<i>Physics small accel (II)</i>	<i>AMS (II)</i>	<i>Exotic nuclei (I)</i>			
	<i>Chair: Ghita</i>	<i>Chair: Fulop</i>	<i>Chair: Delion</i>	<i>Chair: Balabanski</i>	<i>Chair: Stutman</i>	<i>13:30 Round table: JINR at 60</i>
15:00 – 15:50	I. Burducea/M. Straticiuc	N. Palincas <i>Cult Heritage (¹⁴C)</i>	E. Pollacco	D. Neely	S. Miyamoto	<i>M.G.Itkis...B.Sharkov</i>
15:50 – 16:10	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>
16:10 – 17:05	C. Granja	C. Stan-Sion	C. Sotty	D. Stutman	M. Fujiwara	Round table ctn'd
17:05 – 18:00	M. Nistor	<i>Communications</i>	<i>Communications</i>	F. Negoita	O. Tesileanu	19:00 - <i>Banquet</i>
18:00-18:55	<i>Communications</i>	<i>Communications</i>	<i>Communications</i>	<i>Communications</i>		

Sunday June 26th
16:00 Registration begins
20:00 Welcome party

Sunday July 3rd – excursions
Hiking and bus trip choice; start at 9am

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PROGRAM 2nd week

	M o n d a y July 4-th	T u e s d a y July 5-th	W e d n e s d a y July 6-th	T h u r s d a y July 7-th	Friday July 8-th	Saturday July 9-th
	<i>Astroparticles (I)</i>	<i>Nuclear astro (I)</i>	<i>Astroparticles (II)</i>	<i>Exotic nuclei (II)</i>		
	<i>Chair: Ad vd Berg</i>	<i>Chair: Kratz</i>	<i>Chair: Kampert</i>	<i>Chair: Bertulani</i>	<i>Chair:</i>	<i>Departures</i>
9- 9:50	A. Haungs	K. Langanke	Ad. Berg	M. Petrovici	V. Avrigeanu	9:00
10:00- 10:50	K. Kampert	C. Spitaleri	I. Mocioiu	A. Petrovici	M. Gai	
10:50-11:10	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	
11:10 – 12:00	I. Brancus	A. Tumino	R. Diehl	S. Shlomo	M. Hass	
12:00 - 12:50	A. Gladyshev	C. Bertulani	R. Diehl	Bao An Li	B. Mitrica	
13-15	<i>Lunch</i>	<i>Lunch</i>	13:00-13:50 C. Borcea <i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	
	<i>New facilities</i>	<i>Nuclear astro (II)</i>		<i>Exotic nuclei (III)</i>		
	<i>Chair: Langanke</i>	<i>Chair: Hass</i>	<i>Chair:</i>	<i>Chair:</i>	<i>Chair: Trache</i>	
15:00 – 15:50	V. Kolesnikov	K-L. Kratz		M. Gai		
15:50 – 16:10	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	<i>Coffee break</i>	
16:10 – 17:05	D. Nicmorus	A. Haungs		T. Jull	<i>Closing</i>	
17:05 – 18:00	T. Motobayashi	<i>Communications</i>		S. Bishop		
18:00-18:55	<i>Communications</i>	<i>Communications</i>				

Wednesday afternoon: on Sinaia's trails or excursion?