

HISS: Nuclear Theory and Astrophysics Applications, Dubna, 07.-17.08.2007

Program (August 9, 2007)

Time	TUE 07.08.	WED 08.08.	THU 09.08.	FRI 10.08.	MON 13.08.	TUE 14.08.	WED 15.08.	THU 16.08.
10:00 - 11:00	NEx 1	Ast 3	NTh 1	NTh 2	NTh 5	NTh 6	NTh 8	Ast 5
11:00 - 11:30	coffee break							
11:30 - 12:30	NTh 1	NEx 1	NTh 4	Ast 3	NTh 6	NTh 8	NTh 9	Ast 6
12:30 - 13:30	Ast 1	NTh 2	Ast 2	NTh 3	Ast 4	NTh 5	Ast 4	NTh 9
13:30 - 15:30	lunch break							
15:30 - 16:30	Ast 2	NTh 3	Ast 1	NTh 4	NTh 7	Ast 5	Ast 6	NTh 7
16:30 - 17:00	coffee break							
17:00 - 18:00	PS I	PC I	Colloquium*	PC II	PS V	PC III	PC IV	Farewell
18:00 - 19:00	PS II	PS III		PS IV	PS VI	PS VII	PS VIII	
	Welcome							

Lectures (55'+5'):

Nuclear Theory

- NTh 1:** Molecular dynamics for nuclear reaction rates (Neff)
- NTh 2:** Dinuclear systems in nuclear structure and heavy-ion reactions (Scheid)
- NTh 3:** Clusters and condensates in nuclear matter (G. Röpke)
- NTh 4:** Relativistic Hartree Bogoliubov theory for exotic nuclei (Zhou)
- NTh 5:** Halo Nuclei (Ershov)
- NTh 6:** Density functional methods in nuclear physics (Jolos)
- NTh 7:** Asymmetry energy in nuclear matter (Wolter)
- NTh 8:** Introduction to shell-model Monte-Carlo methods (Özen)
- NTh 9:** Density functional methods: from nuclei and nanosystems to astrophysics (Nesterenko)

Astrophysics

- Ast 1:** Astrophysical constraints on nuclear matter (Klähn)
- Ast 2:** Nuclear superfluidity and thermal properties of neutron stars (Sandulescu)
- Ast 3:** Simulation of type Ia supernovae (F. Röpke)
- Ast 4:** Neutrino-induced nucleosynthesis in supernovae (Nadyozhin)
- Ast 5:** Hyperons vs. quark matter in neutron stars (Vidaña)
- Ast 6:** Magnetic fields of neutron stars (Bisnovatyi-Kogan)

Nucl. Exp.

- NEx 1:** Key reactions in nuclear astrophysics - progress and future (Rolfs, first lecture); Fusion and decay in metals - a hope for nuclear waste ? (Rolfs, second lecture)

* Prof. Dr. C. Rolfs: "50 years B²FH+Cameron and beyond"

Excursions:

- TBA: Frank Laboratory for Neutron Physics; Meeting point: 14:15 at the Stolovaya No. 3
- TBA: Flerov Laboratory for Nuclear Reactions; Meeting point: 14:15 at the Stolovaya No. 3
- TBA: Veksler-Baldin Laboratory for High Energy Physics (Nuclotron, Synchrophasotron); 14:00 bus from JINR

- Saturday, 11.08.: Excursion to Sergiev Posad; 8:00 Departure of bus from the hotel "Dubna"
Picnic in Ratmino; after excursion, approx. 17:00 - 21:00 (bring your favored music instruments);
16:30 Departure of bus from the hotel "Dubna"

Problem Solving Seminars (two parallel seminars (A and B) of 60' per slot):

PS I-A: Rolfs:
PS I-B: Neff
PS II-A: Klähn:
PS II-B: Sandulescu
PS III-A: G. Röpke: Bogoliubov transformation; deuteron in nuclear matter
PS III-B: Scheid: Open quantum systems
PS IV-A: F. Röpke
PS IV-B: Zhou: Spin and pseudospin symmetries in finite nuclei
PS V-A: Ershov
PS V-B: Jolos
PS VI-A: Nadyozhin
PS VI-B: Wolter
PS VII-A: Özen
PS VII-B: Vidaña
PS VIII-A: Bisnovatyi-Kogan
PS VIII-B: Nesterenko

Participant Contributions (three contributions of 15'+5' per slot):

PC 1: D. Zablocki - BCS to BEC crossover in quark matter
PC 2: M. Shahabasian - Magnetic field of a neutron star with superconducting quark core in "CFL" - phase
PC 3: D. Iakubovskiy - The possibility of nuclear boiling during core-collapse supernovae
PC 4: TBA
PC 5: TBA
PC 6: TBA
PC 7: D. Horvatic - Pseudoscalar mesons at finite T in a separable DSE model
PC 8: TBA
PC 9: TBA
PC 10: TBA
PC 11: TBA
PC 12: TBA

PC I: Zablocki, Shahabasian, Iakubovskiy
PC II: PC 4, PC 5, PC 6
PC III: Horvatic, PC 8, PC 9
PC IV: PC 12, PC 11, PC 12
