

# HISS: Dense Matter in HIC and Astrophysics, Dubna, 21.08.-01.09.2006

Final Program (September 2, 2006)

Time	MON 21.08.	TUE 22.08.	WED 23.08.	THU 24.08.	FRI 25.08.	MON 28.08.	TUE 29.08.	WED 30.08.	THU 31.08.	FRI 01.09.
10:00 - 11:00	<b>Ast 1</b>	<b>HIC 3</b>	<b>DM 6</b>	<b>DM 10</b>	<b>DM 13</b>	<b>DM 16</b>	<b>DM 21</b>	<b>Ast 5</b>	<b>HIC 9</b>	<b>DM 26</b>
11:00 - 11:30	coffee break									
11:30 - 12:30	<b>HIC 1</b>	<b>DM 3</b>	<b>DM 7</b>	<b>HIC 5</b>	<b>DM 14</b>	<b>DM 17</b>	<b>DM 22</b>	<b>DM 24</b>	<b>Ast 7</b>	<b>Ast 8</b>
12:30 - 13:30	<b>DM 1</b>	<b>Ast 2</b>	<b>HIC 4</b>	<b>DM 11</b>	<b>DM 15</b>	<b>HIC 7</b>	<b>DM 23</b>	<b>Ast 6</b>	<b>HIC 10</b>	<b>Ast 9</b>
13:30 - 15:30	lunch break									
15:30 - 16:30	<b>HIC 2</b>	<b>DM 4</b>	<b>DM 8</b>	<b>HIC 6</b>	<b>DM 6+</b>	<b>DM 18</b>	<b>HIC 8</b>	<b>DM 25</b>	PC IV	Nuclotron + <b>Farewell Barbeque Ratmino</b>
16:30 - 17:00	coffee break					<b>DM 19</b>	coffee break			
17:00 - 18:00	<b>DM 2</b>	<b>DM 5</b>	<b>DM 9</b>	<b>DM 12</b>	PC II+	<b>Ast 3</b>	<b>Ast 4</b>	PC III	PC V	
18:00 - 19:00	PS I	PS II	PC I	PC II	PS II+	<b>DM 20</b>	PS III	PS IV	PS V	
	<b>Welcome</b>					<b>Buffet</b>				

## Lectures (55'+5'):

### Dense Matter Theory

- DM 1, 6, 6+:** Color Superconductivity in Quark Matter (Buballa)
- DM 2, 5, 12:** Quantum fields at finite T,  $\mu$  (Yudichev)
- DM 3, 7, 10:** Quantum Kinetic Theory (Voskresensky)
- DM 4, 8:** Renormalization group approach towards the QCD phase diagram (Schaefer)
- DM 9, 11:** Statistical model for hadron production (Turko)
- DM 13, 16:** BCS theory and beyond (Röpke)
- DM 14:** Warm, dense matter (Redmer)
- DM 15, 17:** Bound states in dense matter (Blaschke)
- DM 23:** Many-body theories of strongly correlated systems (Sedrakian)
- DM 18:** Plasma physics with G.R. in the 70ies and 80ies and new developments (Ebeling) - 45'
- DM 19:** Transport and optical properties in dense plasmas (Reinholz) - 45'
- DM 20:** Superconductivity in strongly correlated systems (Plakida) - 25'
- Kinetics of dense matter: Correlations and memory (Morozov) - 20'
- DM 21, 24, 26:** Lattice QCD at finite T,  $\mu$  (Laermann)
- DM 22, 25:** Pseudoscalar meson nonet at zero and finite temperature (Klabučar)

### Heavy Ion Collisions

- HIC 1:** The ALICE experiment at LHC (Crochet)
- HIC 2, 3:** Dynamics of relativistic heavy-ion collisions (Toneev)
- HIC 4, 5:** Hydrodynamics approach to heavy-ion collisions (Ivanov)
- HIC 6, 8:** Phase transition and fluctuations in A+A collisions (Gorenstein)
- HIC 7, 9:** The CBM Experiment at FAIR (Senger)
- HIC 10:** Search for the mixed phase at the JINR Nuclotron (Sorin)

### Astrophysics

- Ast 1:** Supernovae explosion (Bisnovatyi-Kogan)
- Ast 2:** Properties of the neutron star crust (Bisnovatyi-Kogan)
- Ast 3:** Warm, dense matter in giant planets and exoplanets (Redmer) - 45'
- Ast 4:** Gravitational microlensing: results and perspectives (Zakharov)
- Ast 5:** Dense matter EoS and structure of compact stars (Grigorian)
- Ast 6, 8:** Isolated compact stars: new discoveries and comparison with theory (Popov)
- Ast 7:** Neutrino interactions in compact stars (Sedrakian)
- Ast 9:** Cooling of compact stars (Grigorian)

## Specials:

- Friday, 25.08.: Telephone contact to Vitaly Lazarevich Ginzburg (Nobel prize 2003); 15:00 Conf. Hall
- Monday, 28.08.: Presentation by Dr. Bertram Heinz (head of Moscow branch of Helmholtz Association); 13:30 Dubna Television Interview with participants; 15:00 Conf. Hall
- Thursday, 31.08.: Institute Colloquium on "Ettore Majorana 100" by S. Bilenky; 16:00 Conf. Hall

## Participant Contributions (15'+5'):

PC 1: Anglani, Roberto: Cooling of compact stars with LOFF matter core  
PC 2: Aslanyan, Petros: Multistrange states in p-C collisions at the nuclotron  
PC 3: Berdermann, Jens: Neutrino emissivities in color superconducting quark matter  
PC 4: Egorova, Irina: Laser acceleration of ion beams  
PC 5: Filatov, Andrey: Low-momentum  $\pi$ -meson production from evolving quark condensate  
PC 6: Frisen, Aleksandra: Nonperturbative dynamics of an expanding fluxtube in heavy-ion collisions  
PC 7: Grunfeld, Ana Gabriela: Phase diagram of non-local chiral quark models under compact star conditions  
PC 8: Hauer, Michael: Multiplicity Fluctuations in Central Nucleus-Nucleus Collisions  
PC 9: Ippolito, Nicola: The three flavor LOFF phase of QCD  
PC 10: Kiseleva, Anna: Vector meson study for the CBM experiment  
PC 11: Lyakhov, Konstantin: Baryon stopping and particles production in uRHIC  
PC 12: Newton, William: Sub-nuclear matter in Supernovae and Neutron Stars  
PC 13: Parenti, Irene: Burning and convection process in compact object  
PC 14: Radzhabov, Andrey: In-medium modification of meson properties in a chiral quark model  
PC 15: Arsene, Inout-Cristian: Recent results from the BRAHMS collaboration at RHIC  
PC 16: Soma, Vittorio: Thermodynamic properties of a correlated nuclear system  
PC 17: Werth, Verena: Goldstone bosons in the CFL phase

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PC I: Grunfeld, Werth, Ippolito  
PC II: Newton, Soma, Radzhabov  
PC II+: Frisen, Filatov  
PC III: Hauer, Lyakhov, Egorova  
PC IV: Kiseleva, Arsene, Aslanyan, (**Attention: starts at 15:00 !!**)  
PC V: Berdermann, Anglani, Parenti

## Problem Solving Seminars (60'):

PS 1: Bisnovayi-Kogan: Constraint on the maximum mass for neutron stars  
PS 2: Blaschke: Evaluation of the scalar-pseudoscalar pair correlation function  
PS 3: Buballa: Conservation of baryon number in superconducting quark matter  
PS 4: Gorenstein: Fluctuations in canonical vs. grand canonical ensemble  
PS 5: Grigorian: Solution of the TOV Equations for compact star structure  
PS 6: Klabucar: Transformations of the flavor basis for mesonic states  
PS 7: Laermann: Improved actions on the lattice  
PS 8: Röpke: Bogoliubov Transformation etc.  
PS 9: Schaefer: Derivation of a flow equation  
PS 10: Sedrakian: Details on the sigma model  
PS 11: Senger: Sketch of an experimental program on dense nuclear matter at the Nuclotron  
PS 12: Voskresensky: Calculation of critical temperature for  $\lambda\phi^4$  model

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PS I: Bisnovaty-Kogan, Buballa  
PS II: Voskresensky, Schaefer  
PS II+: Röpke, Gorenstein  
PS III: Klabučar, Laermann  
PS IV: Senger, Sedrakian  
PS V: Zablocki (Dia-Show)

## Excursions:

Wednesday, 23.08.: Frank Laboratory for Neutron Physics; Meeting point: 14:25 at the Stolovaya No. 3  
Thursday, 24.08.: Flerov Laboratory for Nuclear Reactions; Meeting point: 14:25 at the Stolovaya No. 3  
Sunday, 27.08.: Sergiev Posad; 9:00 Departure of bus from Moskovskaya 2 and 'Gostiniza Dubna-I'  
Friday, 01.09.: Veksler-Baldin Laboratory for High Energy Physics (Nuclotron, Synchrophasotron);  
14:00 bus from JINR, continues to Ratmino/BLTP, 16:00 Barbeque

Comments to the Program please send to:

David Blaschke <david@theor.jinr.ru> and Vladimir Skokov <vvskokov@theor.jinr.ru>