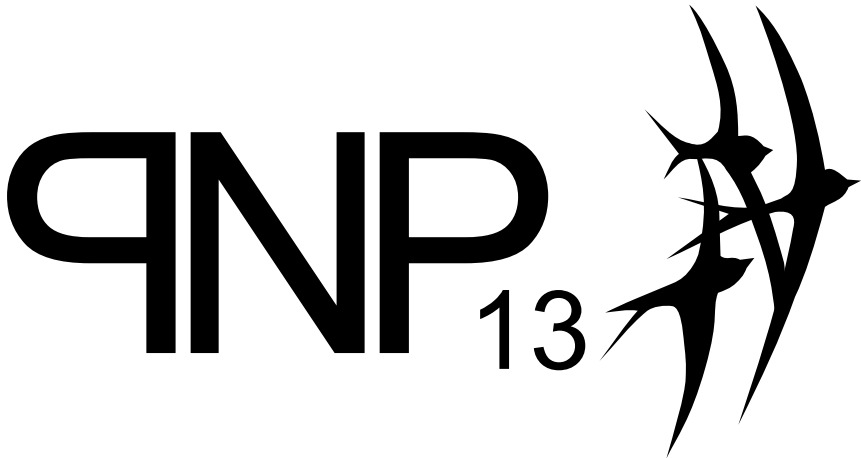


Russian Academy of Sciences  
Institute of Problems of Chemical Physics RAS  
Joint Institute for High Temperatures RAS



XIII International Conference on  
**Physics of Non-Ideal Plasmas**  
September 13 — 18, 2009, Chernogolovka, Russia

# Conference Program

Chernogolovka 2009

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## **Sponsors**

Russian Academy of Sciences  
Russian Foundation for Basic Research (grant No. 09-02-06154r)  
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Time	Sunday 13.09.2009	Monday 14.09.2009	#	Tuesday 15.09.2009	#
9:00-9:20	<b>Arrival</b>	<b>Opening and Welcome</b>		<b>Koenig, Brambrink</b>	<b>7.4</b>
9:20-9:40		<b>Fortov</b>	<b>6.1</b>	<i>Zhernokletov</i>	7.6
9:40-10:00		<i>Filinov V.</i>	1.5	<i>Boriskov</i>	4.4
10:00-10:20		<i>Reinholz</i>	1.2	<i>Zaporozhets</i>	3.10
10:20-10:40		<b>Coffee break</b>		<b>Coffee break</b>	
10:40-11:00		<i>Dufty</i>	1.8	<i>Hallo</i>	7.2
11:00-11:20		<i>Son</i>		<i>Tkachenko I.</i>	4.5
11:20-11:40		<i>Wierling</i>	1.12	<i>Holst</i>	4.6
11:40-12:00		<i>Calisti</i>	1.19	<i>Gryaznov</i>	4.7
12:00-12:20		<b>Lunch</b>		<b>Lunch</b>	
12:20-14:00		<b>Lunch</b>		<b>Lunch</b>	
14:00-14:20	<b>Registration</b>	<i>Ebeling</i>	2.1	<i>Bornath</i>	3.7
14:20-14:40		<i>Deutsch</i>	2.13	<i>Gericke</i>	3.12
14:40-15:00		<i>Ramazanov</i>	2.5	<i>Sengebusch</i>	3.3
15:00-15:20		<i>Rakhel</i>	2.7	<i>Baimbetov</i>	3.18
		<b>Coffee break</b>		<b>Coffee break</b>	
15:20-15:40		<i>Gordon</i>	3.23	<i>Norman</i>	3.16
15:40-16:00		<i>Schwarz</i>	2.6	<i>Filinov A.</i>	1.18
16:00-16:20		<i>Lozovik</i>	1.6	<i>Levashov</i>	3.21
16:20-16:40		<i>Tkachenko S.</i>	1.21	<i>Pyalling</i>	4.2
16:40-17:00		<b>Concert</b>		<b>Poster time S1-S7</b>	
17:00-17:30				<b>Discussion</b>	
17:30-18:00					
18:00-18:30					
18:30-19:00					
19:00-19:30	<b>Welcome reception</b>			<b>HEDGEHOB</b>	
19:30-20:00					

Time	Wednesday 16.09.2009	#	Thursday 17.09.2009	#	Friday 18.09.2009	#	
9:00-9:40	<i>Hoffmann</i>	5.10	<i>Redmer, Nettelmann</i>	6.7	<i>Morfill</i>	8.37	
9:40-10:00	<i>Golubev</i>	5.16	<i>Däppen</i>	6.2	<i>Zobnin</i>	8.1	
10:00-10:20	<i>Kostenko</i>	3.14	<i>Potekhin</i>	6.3	<i>Karasev</i>	8.6	
10:20-10:40	<i>Orlov</i>	5.15	<i>Starostin</i>	6.5	<i>Schram</i>	8.9	
10:40-11:00	<b>Coffee break</b>		<b>Coffee break</b>		<i>Ott</i>	8.20	
11:00-11:20	<i>Petrov Yu.</i>	5.12	<i>Chugunov</i>	6.6	<b>Coffee break</b>		
11:20-11:40	<i>Krainov</i>	5.3	<i>Iosilevskiy</i>	6.8	<i>Petrov</i>	8.28	
11:40-12:00	<i>Povarnitsin</i>	5.14	<i>Ballenegger</i>	2.9	<i>Molotov</i>	8.27	
12:00-12:20	<i>Khrapak</i>	2.8	<i>Rethfeld</i>	5.13	<i>Davletov</i>	8.30	
12:20-12:40	<b>Lunch</b>		<b>Lunch</b>		<i>Usachev</i>	8.33	
12:40-13:30					<b>Closing</b>		
13:30-14:00	<b>Conference excursion</b>						
14:00-14:15			<i>Morozov</i>				1.22
14:15-14:30			<i>Stegailov</i>				1.20
14:30-14:45			<i>Kolesnikov</i>				7.7
14:45-15:00			<i>Yuriev</i>				3.22
15:00-15:15			<i>Grinenko</i>				3.5
15:15-15:45			<b>Coffee break</b>				
15:45-16:00			<i>Kählert</i>				3.20
16:00-16:15			<i>Winkel</i>				3.1
16:15-16:30			<i>Shakhray</i>				2.12
16:30-16:45			<i>Vorona</i>				8.29
16:45-17:00			<i>Lisin</i>				8.34
17:00-18:00							<b>Poster time S8</b>
18:00-19:00			<b>Conference dinner</b>				<b>Discussion</b>
19:00-20:00							

# CONFERENCE PROGRAM

## Oral session

### Monday, 14.09.2009

- |               |   |      |
|---------------|---|------|
| 9:20 - 10:00  | Extreme states of matter on Earth and in space. <i>Fortov V.E. (JIHT RAS, Moscow, Russia)</i>   | 6.1  |
| 10:00 - 10:20 | Path integral Monte Carlo simulations of the equation of state of strongly coupled quark-gluon plasma. <i>Ivanov Yu.B., Skokov V.V., Filinov V.S. (JIHT RAS, Moscow, Russia), Bonitz M., Levashov P.R., Fortov V.E.</i> | 1.5  |
| 10:20 - 10:40 | Diagnostics of dense plasmas via transport and optical properties. <i>Reinholz H. (U. Rostock, Rostock, Germany), Raitza T., Röpke G., Wierling A., Winkel M.</i>   | 1.2  |
| 10:40 - 11:00 | <b>Coffee break</b>   |      |
| 11:00 - 11:20 | Temperature dependence of density profile for confined charges. <i>Wrighton J., Dufty J.W. (U. Florida, Gainesville, USA), Bonitz M., Kahlert H.</i>  | 1.8  |
| 11:20 - 11:40 | Hydrodynamics and transport properties of nonideal plasmas. <i>Son E.E. (JIHT RAS, Moscow, Russia)</i>  |      |
| 11:40 - 12:00 | Dynamic local field corrections for two-component plasmas. <i>Wierling A. (U. Rostock, Rostock, Germany)</i>  | 1.12 |
| 12:00 - 12:20 | Classical molecular dynamics model for coupled two-component plasmas – ionization balance and time considerations. <i>Calisti A. (PIIM, Marseille, France), Talin B.</i>  | 1.19 |
| 12:20 - 14:00 | <b>Lunch</b>  |      |

14:00 - 14:20	Velocity distributions and kinetic equations for plasmas including Levy-type noise. <i>Ebeling W.O. (HU Berlin, Berlin, Germany), Romanovsky M.Yu., Sokolov I.M.</i>	2.1
14:20 - 14:40	Low ion-velocity slowing down in a strongly magnetized plasma target. <i>Deutsch C.D. (UParis XI, Orsay, France)</i>	2.13
14:40 - 15:00	Ionization equilibrium, thermodynamic and dynamic properties of a dense partially ionized plasma. <i>Redmer R., Ramazanov T.S. (IETP KazNU, Almaty, Kazakhstan), Dzhumagulova K.N., Gabdullin M.T., Turekhanova K.M.</i>	2.5
15:00 - 15:20	On the metal-nonmetal transition in fluid aluminum. <i>Rakhel A.D. (JIHT RAS, Moscow, Russia)</i>	2.7
15:20 - 15:40	<b>Coffee break</b>	
15:40 - 16:00	Uniform electrical discharge through solid xenon. <i>Gordon E.B. (IPCP RAS, Chernogolovka, Russia), Matyushenko V.I., Sizov V.D., Smirnov B.M.</i>	
16:00 - 16:20	HNC calculations for the structure of dense multicomponent plasmas. <i>Schwarz V. (U. Rostock, Rostock, Germany), Holst B., Bornath T., Fortmann C., Kraeft W.D., Thiele R., Redmer R., Gregori G., Lee H.J., Doeppner T., Glenzer S.H.</i>	2.6
16:20 - 16:40	Phase diagram and crystallization in dipolar bosonic systems. <i>Filinov A.V., Prokof'ev N.V., Bonitz M., Lozovik Yu.E. (ISAN, Troitsk, Russia)</i>	1.6
16:40 - 17:00	Experimental and numerical study of distribution of dense non-ideal core and rare corona plasmas in the discharge channel. <i>Tkachenko S.I. (MIPT, Dolgoprudny, Russia), Mingaleev A.R., Ter-Oganesyan A.E., Shelkovenko T.A., Romanova V.M., Olhovskaya O.G., Krukovskij A.Yu., Lomonosov I.V., Apfelbaum E.M., Pikuz S.A.</i>	1.21

17:30 – 18:30 **Piano music concert**  
 (F.Chopin, J.Brams, F.List)  
*Young pianists of Chernogolovka –  
 Lyubov Litvinova, Anna Stepanova, Muzafar  
 Muidinov*

## Tuesday, 15.09.2009

- |               |  |      |
|---------------|--|------|
| 9:00 - 9:40   | Experimental and numerical study of isentropic compression by laser irradiation.<br><i>Koenig M. (LULI, Palaiseau), Brambrink E. (LULI, Palaiseau), Vinci T., Mazevet S., Guyot F., Morard G., Wei H., Barbrel B., Benuzzi-Mounaix A., Miyanashi K., Koadama R., Ozaki N., Kimura T.</i> | 7.4  |
| 9:40 - 10:00  | Quasi-entropic compression of helium in cylindrical devices at pressures of ~ 100 – 460 GPa. <i>Arinin V.A., Buzin V.N., Grigorieva Yu.A., Davydov N.B., Zhernokletov M.V. (RFNC-VNIIEF, Sarov, Russia), Manachkin S.F., Orlov V.D., Khrustalyov V.V.</i>                                | 7.6  |
| 10:00 - 10:20 | Isentropic compression of substances using ultra-high magnetic field: zero isotherms of protium and deuterium in pressure range up to 5 Mbar. <i>Boriskov G.V. (RFNC-VNIIEF, Sarov, Russia), Bykov A.I., Egorov N.I., Dolotenko M.I., Pavlov V.N., Timareva V.I.</i>                     | 4.4  |
| 10:20 - 10:40 | S- and P- polarized reflectivities of explosively driven strongly non-ideal xenon plasma. <i>Zaporozhets Yu.B. (IPCP RAS, Chernogolovka, Russia), Mintsev V.B., Gryaznov V.K., Reinholz H., Röpke G., Fortov V.E.</i>  | 3.10 |
| 10:40 - 11:00 | <b>Coffee break</b>  |      |
| 11:00 - 11:20 | LIFT transfer process modeling in ns and fs laser irradiation regimes. <i>Hallo L. (CELIA, Talence, France), Mezel C., Tikhonchuk V.T., Bourgeade A., Breil J.</i>   | 7.2  |



11:20 - 11:40	Dynamic properties of one-component strongly coupled plasmas: the mixed Löwner-Nevalinna-Pick approach. <i>Arkhipov Yu.V., Askaruly A., Davletov A.E., Tkachenko I.M.</i> (UPV, Valencia, Spain)	4.5
11:40 - 12:00	Reflectivity of hydrogen along the Hugoniot curve using QMD simulations. <i>Holst B.</i> (U. Rostock, Rostock, Germany), <i>Redmer R.</i>	4.6
12:00 - 12:20	Equation of state of shock compressed hydrogen. <i>Gryaznov V.K.</i> (IPCP RAS, Chernogolovka, Russia), <i>Iosilevskiy I.L.</i>	4.7
12:20 - 14:00	<b>Lunch</b>	
14:00 - 14:20	Energy relaxation in dense two-temperature plasmas. <i>Schlages M., Bornath T.</i> (U. Rostock, Rostock, Germany), <i>Gericke D.O., Vorberger J.</i>	3.7
14:20 - 14:40	Structure and x-ray scattering in warm dense matter. <i>Gericke D.O.</i> (Warwick, Coventry, United Kingdom), <i>Wuensch K., Vorberger J.</i>	3.12
14:40 - 15:00	K-line emission profiles of warm dense matter with focus on plasma polarization shift and M-shell satellites. <i>Sengebusch A.</i> (U. Rostock, Rostock, Germany), <i>Reinholz H., Röpke G.</i>	3.3
15:00 - 15:20	Influence of the correlation effects on the scattering and absorption of the electromagnetic waves in plasma. <i>Arkhipov Yu.V., Baimbetov F.B.</i> (IETP KazNU, Almaty, Kazakhstan), <i>Davletov A.E.</i>	3.18
15:20 - 15:40	<b>Coffee break</b>	
15:40 - 16:00	Density effects in crossover from bound to free states in plasmas. <i>Norman G.E.</i> (JIHT RAS, Moscow, Russia), <i>Lankin A.V.</i>	3.16
16:00 - 16:20	Collective mode dispersion in a two-dimensional quantum dipole system. <i>Kalman G., Golden K., Filinov A.V.</i> (CAU, Kiel, Germany), <i>Hartmann P., Bonitz M., Donko Z.</i>	1.18

16:20 - 16:40	Wigner representation of quantum mechanics and dynamic conductivity of dense Hydrogen. <i>Levashov P.R. (JIHT RAS, Moscow, Russia), Filinov V.S., Bonitz M., Fortov V.E.</i>	3.21
16:40 - 17:00	Semiempirical multiphase equation of state of liquid hydrogen. <i>Pyalling A.A. (IPCP RAS, Chernogolovka, Russia)</i>	4.2
17:00 – 18:00	<b>Poster session S1-S7</b>	
18:00 - 19:00	<b>Poster session S1-S7 discussion</b>	
19:00 – 20:00	<b>HEDgeHOB collaboration and board meeting</b>	

## Wednesday, 16.09.2009

9:00 - 9:40	High energy-density physics with heavy ion beams and related interaction phenomena. <i>Hoffmann D.H.H. (TUD, Darmstadt, Germany), Roth M., Frank A., Korostij S., Menzel J., Udrea S., Tahir N.A., Rosmej O., Varentsov D.</i>	5.10
9:40 - 10:00	Nonideal plasma physics in the ITEP and GSI FAIR team projects. <i>Sharkov B.Yu., Tahir N.A., Hoffmann D.H.H., Golubev A.A. (ITEP, Moscow, Russia)</i>	5.16
10:00 - 10:20	The kinetic model of laser plasma. <i>Kostenko O.F. (JIHT RAS, Moscow, Russia), Andreev N.E.</i>	3.14
10:20 - 10:40	Radiative properties of substances at high energy density and optimizing soft x-ray sources for ICF applications. <i>Orlov N.Yu. (JIHT RAS, Moscow, Russia)</i>	5.15
10:40 - 11:00	<b>Coffee break</b>	

11:00 - 11:20	Pump-probe “seismology” of ultrafast two-temperature processes inside a film irradiated by a femtosecond laser pulse. <i>Anisimov S.I., Inogamov N.A., Khokhlov V.A., Petrov Yu.V. (ITP RAS, Chernogolovka, Russia), Fortov V.E., Agranat M.B., Zhakhovskii V.V., Ashitkov S.I., Komarov V.P., Shepelev V.V.</i>	5.7
11:20 - 11:40	Resonance penetration of intense femtosecond laser pulses through plasma of ultra-thin foils. <i>Krainov V.P. (MIPT, Dolgoprudny, Russia), Bordyukh N.V.</i>	5.3
11:40 - 12:00	On the modeling of laser-metal interactions. <i>Povarnitsyn M.E. (JIHT RAS, Moscow, Russia), Andreev N.E., Kostenko O.F.</i>	5.14
12:00 - 12:20	Dielectric catastrophe and insulator-metal transition in AlH <sub>3</sub> . <i>Khrapak A.G. (JIHT RAS, Moscow, Russia), Molodets A.M., Shakh-ray D.V., Fortov V.E.</i>	2.8
12:20 - 13:30	<b>Lunch</b>	
13:30 - 17:00	<b>Conference excursion</b>	
18:00 – 20:00	<b>Conference dinner</b>	

## Thursday, 17.09.2009

9:00 - 9:40	Interior structure of Jupiter and Saturn after 40 years of modeling. <i>Nettelmann N. (U. Rostock, Rostock, Germany), Holst B., Lorenzen W., Redmer R. (U. Rostock, Rostock, Germany)</i>	6.7
9:40 - 10:00	High-precision equation-of-state formalisms for solar and stellar modeling. <i>Däppen W. (USC, Los Angeles, USA)</i>	6.2

10:00 - 10:20	Thermodynamic functions of dense plasmas: approximations for astrophysical applications. <u>Potekhin A.Yu.</u> ( <i>Ioffe Institute, Saint-Petersburg, Russia</i> ), <i>Chabrier G.</i>	6.3
10:20 - 10:40	Account of atomic and molecular contributions in the equation-of-state for a weakly non-ideal hydrogen plasmas. <u>Starostin A.N.</u> ( <i>TRINITI, Troitsk, Russia</i> ), <i>Roerich V.C.</i>	6.5
10:40 - 11:00	<b>Coffee break</b>	
11:00 - 11:20	Corrections to linear mixing in binary ionic mixtures and plasma screening at zero separation. <u>Chugunov A.I.</u> ( <i>Ioffe Institute, Saint-Petersburg, Russia</i> ), <i>DeWitt H.E.</i>	6.6
11:20 - 11:40	Plasma polarization in massive astrophysical objects. <i>Iosilevskiy I.L.</i> ( <i>JIHT RAS, Moscow, Russia</i> )	6.8
11:40 - 12:00	Numerical data for thermodynamics of hydrogen in the Saha regime from exact low-temperature expansions. <i>Alastuey A.</i> , <u>Ballenegger V.</u> ( <i>UFC, Besancon, France</i> )	2.9
12:00 - 12:20	Transient electron-hole plasma induced in dielectrics by high-intensity laser or particle beams. <u>Rethfeld B.</u> ( <i>TUKL, Kaiserslautern, Germany</i> ), <i>Ivanov D.S.</i> , <i>Hoffmann D.H.H.</i>	5.13
12:20 - 14:00	<b>Lunch</b>	
14:00 - 14:15	Approaches to the simulation of nonideal plasmas by the method of antisymmetrized wave packet molecular dynamics. <u>Morozov I.V.</u> ( <i>JIHT RAS, Moscow, Russia</i> ), <i>Valuev I.A.</i>	1.22
14:15 - 14:30	<i>Ab initio</i> modeling of solids with hot electron subsystem. <i>Stegailov V.V.</i> ( <i>JIHT RAS, Moscow, Russia</i> )	1.20

14:30 - 14:45	Application of proton radiography to non-ideal plasma studies. <u>Kolesnikov S.A.</u> (IPCP RAS, Chernogolovka, Russia), Golubev A.A., Demidov V.S., Demidova E.V., Dudin S.V., Kantsyrev A.V., Mintsev V.B., Smirnov G.N., Turtikov V.I., Utkin A.V., Fortov V.E., Sharkov B.Yu.	7.7
14:45 - 15:00	Magneto-resistance of shock-compressed non-ideal argon plasma. <u>Yuriev D.S.</u> (IPCP RAS, Chernogolovka, Russia), Shilkin N.S., Mintsev V.B., Fortov V.E.	3.22
15:00 - 15:15	Nonlinear collisional absorption of laser light in dense plasmas. <u>Grinenko A.</u> (Warwick, Coventry, United Kingdom), Gericke D.O.	3.5
15:15 - 15:45	<b>Coffee break</b>	
15:45 - 16:00	Correlation build-up in trapped charged particle systems. <u>Kählert H.</u> (CAU, Kiel, Germany), Bonitz M.	3.20
16:00 - 16:15	Dynamical collision frequency in warm dense matter: exemplary application to plasma reflectivity. <u>Winkel M.</u> (U. Rostock, Rostock, Germany), Reinholz H., Wierling A., Röpke G., Zaporozhets Yu.B., Mintsev V.B.	3.1
16:15 - 16:30	Hydrofullerene C <sub>60</sub> H <sub>36</sub> under high-pressure short-time conditions. <u>Shakhray D.V.</u> (IPCP RAS, Chernogolovka, Russia), Savinykh A.S., Molodets A.M.	2.12
16:30 - 16:45	Diagnostics of plasma with dust grain induced by electron beam. <u>Vorona N.A.</u> (JIHT RAS, Moscow, Russia), Gavrikov A.V., Petrov O.F., Vasiliev M.N., Fortov V.E.	8.29
16:45 - 17:00	New technique for analysis of interparticle interaction in non-ideal dissipative systems. <u>Vaulina O.S.</u> , <u>Lisin E.A.</u> (JIHT RAS, Moscow, Russia), Gavrikov A.V., Petrov O.F., Fortov V.E.	8.34
17:00 - 18:00	<b>Poster session S8</b>	

18:00 - 19:00 **Poster session S8 discussion**

## Friday, 18.09.2009

- 9:00 - 9:40 Study of critical phenomena with complex plasmas. *Morfill G. (Max Planck Institute for Extraterrestrial Physics, Munich)*
- 9:40 - 10:00 Compressibility of dusty plasma from observation of compression wave propagation. 8.1  
*Usachev A.D., Zobnin A.V. (JIHT RAS, Moscow, Russia), Petrov O.F., Fortov V.E., Thoma M.H., Hoefner H., Kretschmer M., Fink M., Morfill G.E.*
- 10:00 - 10:20 Magnetic tops in complex plasmas. 8.6  
*Karasev V.Yu. (Institute of Physics SPbSU, St-Petersburg, Russia), Dзлиева E.S., Golubev M.S.*
- 10:20 - 10:40 Kinetic theory of dusty plasmas. 8.9  
*Schram P.P.J.M. (EUT, Eindhoven, The Netherlands)*
- 10:40 - 11:00 Anomalous diffusion in Yukawa plasmas. 8.20  
*Ott T. (CAU, Kiel, Germany), Bonitz M., Hartmann P., Donkó Z.*
- 11:00 - 11:20 **Coffee break**
- 11:20 - 11:40 Dusty plasma and statistical theory of liquid state: diagnostics, simulations and results. 8.28  
*Petrov O.F. (JIHT RAS, Moscow, Russia), Vaulina O.S., Fortov V.E.*
- 11:40 - 12:00 Overview of dusty plasma experiments on the International Space Station. 8.27  
*Molotkov V.I. (JIHT RAS, Moscow, Russia), Lipaev A.M., Fortov V.E., Petrov O.F., Naumkin V.N., Morfill G.E., Thomas H.M., Ivlev A.V., Hagl T.*
- 12:00 - 12:20 New model of dusty plasma particles interactions. 8.30  
*Baimbetov F.B., Davletov A.E. (IETP KazNU, Almaty, Kazakhstan), Kudyshev Z.A., Mukhametkarimov E.S.*

- 12:20 - 12:40 Recent results from the PK-4 experiments with dusty plasmas under microgravity conditions. 8.33  
*Thoma M.H., Hoefner H., Usachev A.D. (JIHT RAS, Moscow, Russia), Zobnin A.V., Petrov O.F., Fortov V.E., Kretschmer M., Fink M., Morfill G.E.*
- 12:40 - 13:30 **Conference closing**

## Poster session

### S1: STATISTICAL PHYSICS AND MATHEMATICAL MODELING OF STRONGLY COUPLED COULOMB SYSTEMS

- 1.1 Mathematical simulation of kinetic processes in the non-ideal nuclear-excited dust plasma of the noble gases. *Budnik A.P., Deputatova L.V. (JIHT RAS, Moscow, Russia), Fortov V.E., Kosarev V.A., Rykov V.A., Vladimirov V.I.*
- 1.3 Calculation of canonical properties and excited states by path integral numerical methods. *Vorontsov-Velyaminov P.N., Voznesenskiy M.A. (SPbSU, Saint-Petersburg, Russia), Polyakov E.A., Lyubartsev A.P.*
- 1.4 Investigation formation of charge and of energy spectra of multiply charged ions, generated under the action of laser radiation on the surface of two-element targets  $Tm_2O_3$ ,  $Yb_2O_3$  and  $Eu_2O_3$ . *Khaydarov R. (IAPh-Tashkent, Tashkent, Uzbekistan), Berdierov G.*
- 1.7 Quantum potential including diffraction and exchange effects. *Dufty J.W. (U. Florida, Gainesville, USA), Dutta S., Bonitz M., Filinov A.*
- 1.9 Semi-classical model of strongly correlated Coulomb systems in weak magnetic field. *Ciftja O. (PVAMU, Prairie View, Texas 77446, USA)*
- 1.11 Interfacial properties of the strongly coupled imidazolium ionic liquids: a molecular dynamics study. *Kislenko S.A. (JIHT RAS, Moscow, Russia), Samoylov I.S., Amirov R.H.*

- 1.13 Specific features of spallation processes in polymethylmetacrylate under high strain rate. Krasyuk I.K. (JIHT RAS, Moscow, Russia), Geraskin A.A., Khishchenko K.V., Pashinin P.P., Semenov A.Yu., Vovchenko V.I.
- 1.14 Transition of electromagnetic wave through a warm overdense plasma. Rajaei L. (QOMU, Qom, Iran), Mirabotalebi S.
- 1.15 Coulomb systems modeling under consideration of finite instrumental resolution scales. Minkova N.R. (TSU, Tomsk, Russia)
- 1.16 Ionization cross section for strongly coupled hydrogen plasma with arbitrary ionization degree. Baimbetov F.B. (IETP KazNU, Almaty, Kazakhstan), Kudyshev Z.A.
- 1.17 Modeling of dielectrics bombardment with swift heavy ions. Ivanov D.S. (TUKL, Kaiserslautern, Germany), Osmani O., Rethfeld B.
- 1.23 Formation of the globular defects in fluorite-like ionic crystals. Yakub L.N. (OSAR, Odessa, Ukraine), Yakub E.S.

## **S2: EQUILIBRIUM PROPERTIES AND EQUATION OF STATE OF DENSE PLASMAS**

- 2.2 Phase shifts and the second virial coefficient for a partially ionized Hydrogen plasma. Ramazanov T.S., Omarbakiyeva Y.A. (U. Rostock, Rostock, Germany), Röpke G.
- 2.3 Electrical resistivity in warm dense plasmas beyond the average-atom model. Pain J.C. (CEA, Bruyères-le-Châtel, France), Dejonghe G.
- 2.4 Modeling of thermodynamic properties of dense multicharged-ion plasmas based on the chemical-picture approach. Shadrin A.A. (RFNC-VNIITF, Snezhinsk, Russia), Loboda P.A., Popova V.V.
- 2.8 Dielectric catastrophe and insulator-metal transition in  $\text{AlH}_3$ . Khrapak A.G. (JIHT RAS, Moscow, Russia), Molodets A.M., Shakh-ray D.V., Fortov V.E.



- 2.10 Use of pulsed radiography for investigation of equation of states of substances at megabar pressures. *Egorov N.I., Boriskov G.V., Bykov A.I. (RFNC-VNIIEF, Sarov, Russia), Kuropatkin Yu.P., Luk'yanov N.B., Mironenko V.D., Pavlov V.N.*
- 2.11 Multiphase equation of state for iron at high pressures and temperatures. *Khishchenko K.V. (JIHT RAS, Moscow, Russia)*
- 2.14 Semiempirical equations of state for metals based on Thomas- Fermi model. *Shemyakin O.P. (JIHT RAS, Moscow, Russia), Khishchenko K.V.*
- 2.15 Thermodynamic properties of Gaseous plasmas in the zero-temperature limit. *Iosilevskiy I.L. (JIHT RAS, Moscow, Russia)*

### **S3: KINETICS, TRANSPORT AND OPTICAL PROPERTIES OF DENSE COULOMB SYSTEMS**

- 3.2 Magnetotransport properties of dense plasmas. *Reinholz H. (U. Rostock, Rostock, Germany), Adams J., Röpke G., Redmer R., Shilkin N.S., Mintsev V.B., Gryaznov V.K.*
- 3.4 The calculations of transport coefficients of noble gases under high pressures. *Apfelbaum E.M. (JIHT RAS, Moscow, Russia)*
- 3.6 On the replacement of collisional recombination mechanism in nonideal plasma. *Lankin A.V. (MIPT, Dolgoprudny, Russia)*
- 3.8 Pressure broadening of spectral lines in dense Lithium plasmas. *Lorenzen S. (U. Rostock, Rostock, Germany), Wierling A., Reinholz H., Röpke G.*
- 3.9 Radiation hydrodynamics of laser-induced plasmas using dynamic collision frequencies. *Sperling P. (U. Rostock, Rostock, Germany), Wierling A., Röpke G., Winkel M.*
- 3.11 Quantum kinetic approach to time-resolved photoionization of multi-electron atoms. *Bauch S., Hochstuhl D., Balzer K., Bonitz M. (CAU, Kiel, Germany)*
- 3.13 Atomic database Spectr-W<sup>3</sup> for plasma spectroscopy and other applications. Current status and perspectives. *Loboda P.A. (RFNC-VNIITF, Snezhinsk, Russia), Gagarin S.V., Kozlov A.I., Morozov S.V., Popova V.V., Vanina I.A., Faenov A.Ya., Magunov A.I., Pikuz T.A., Skobelev I.Yu., Urnov A.M., Vainshtein L.A.*

- 3.15 The modeling of the continuous absorption spectra of the dense hydrogen plasma on the base of the cut-off Coulomb potential. Sakan N.M. (*IoP, Zemun-Beograd, Serbia*), Mihajlov A.A., Ignjatovic Lj.M., Sreckovic V.A.
- 3.17 Interparticle interactions effect on behavior of caloric equation of state for plasma of dense metals vapor. Shumikhin A.S. (*JIHT RAS, Moscow, Russia*), Khomkin A.L.
- 3.19 Transport coefficients in dense plasmas including ion-ion structure factor. Karakhtanov V.S. (*IPCP RAS, Chernogolovka, Russia*), Redmer R., Reinholz H., Röpke G.

#### **S4: DENSE HYDROGEN**

- 4.1 Thermodynamic properties of isentropically compressed hydrogen (deuterium) of megabar range. Gryaznov V.K. (*IPCP RAS, Chernogolovka, Russia*), Iosilevskiy I.L., Fortov V.E.
- 4.3 Conductivity of multiple shock compressed hydrogen along 135 and 180 GPa isobars. Ternovoi V.Ya. (*IPCP RAS, Chernogolovka, Russia*), Pyalling A.A., Nikolaev D.N., Kvitov S.V.

#### **S5: LASER AND HEAVY-ION-PRODUCED PLASMAS**

- 5.2 Ability of plasma to absorb laser radiation depending on the angle of its interaction. Khaydarov R. (*IAPh-Tashkent, Tashkent, Uzbekistan*), Beisinboeva H., Kholboev A.
- 5.4 Simulations of shock and quasi-isentropic compression experiments driven by intense heavy ion beams. Grinenko A. (*Warwick, Coventry, United Kingdom*), Gericke D.O., Varentsov D., Vorberger J.
- 5.5 Comparison of two theories during self focusing of laser beams in relativistic plasma. Walia K. (*NIT Jalandhar, Jalandhar, India*), Singh A.

- 5.6 Potential of the Large Hadron Collider at CERN to study high energy density physics. Tahir N.A. (GSI, Darmstadt, Germany), Schmidt R., Shutov A., Lomonosov I.V., Piriz A.R., Hoffmann D.H.H., Fortov V.E., Deutsch C.
- 5.8 Specific features of spallation processes in a Plexiglas (PMM) under high strain rate. Krasyuk I.K. (GPI, Moscow, Russia), Geraskin A.V., Khishchenko K.V., Pashinin P.P., Semenov A.Yu., Vovchenko V.I.
- 5.9 Dense xenon nanoplasmas in intense laser fields. Hilse P., Bornath T. (U. Greifswald, Greifswald, Germany), Moll M., Schlanges M.
- 5.11 Experimental investigation of femtosecond laser ablation spectral thresholds, condensed matter-dense plasma phase transition dynamics in ambient and vacuum conditions. Loktionov E.Yu. (BMSTU, Moscow, Russia), Ovchinnikov A.V., Protasov Yu.Yu., Sitnikov D.S.
- 5.17 Non Linear propagation of intense laser beams through collisional plasmas. Walia K. (NIT Jalandhar, Jalandhar, India), Singh A.

## **S6: DENSE ASTROPHYSICAL PLASMAS**

- 6.4 Low-velocity ion stopping in binary ionic mixtures. Fromy P., Deutsch C. (Paris Sud, Orsay, France), Tashev B.A., Baimbetov F.B.

## **S7: PHASE TRANSITIONS IN PLASMAS AND FLUIDS**

- 7.1 Fluctuation approach to the nonideal plasma equation of state calculation. Saitov I.M. (JIHT RAS, Moscow, Russia), Lankin A.V., Norman G.E.
- 7.3 Sound velocity measurements behind the shock wave in tin. Zhernokletov M.V. (RFNC-VNIIEF, Sarov, Russia)
- 7.5 The investigation of phase changes in Cerium and Titanium by PVDF-gauges. Borisenok V.A., Zhernokletov M.V. (RFNC-VNIIEF, Sarov, Russia), Simakov V.G., Zocher M.A., Cherne F.J.

## S8: DUSTY PLASMAS

- 8.2 Dynamic properties of dusty plasmas with an external ionization source.  
*Filippov A.V., Fortov V.E., Starostin A.N., Tkachenko I.M. (UPV, Valencia, Spain), Ballester D., Conde L.*
- 8.3 Effective interaction potential of dust particles on the basis of the Poisson equation and experimental data.  
*Ramazanov T.S., Kodanova S.K. (IETP KazNU, Almaty, Kazakhstan), Daniyarov T.T., Omarbakiyeva Y.A.*
- 8.4 Ordered structures in nuclear-track dusty plasma for potential and nonpotential forces of interparticle interaction.  
*Deputatova L.V. (JIHT RAS, Moscow, Russia), Naumkin V.N., Vladimirov V.I., Meshakin V.I., Rykov V.A., Filinov V.S.*
- 8.5 2D molecular dynamic simulations of the dusty plasma in the glowing discharge.  
*Dikalyuk A.S. (IPMech, Moscow, Russia), Surzhikov S.T.*
- 8.7 Thermodynamic characteristics of dusty plasma.  
*Gusak D.I. (BMSTU, Moscow, Russia)*
- 8.8 Crystallization dynamics of spherically confined dusty plasmas. *Kählert H (CAU, Kiel, Germany), Bonitz M.*
- 8.10 Experimental study of orientation and dynamical properties of rod-like particles in RF discharge plasma.  
*Timirkhanov R.A. (JIHT RAS, Moscow, Russia), Vasilieva E.V., Gavrikov A.V., Petrov O.F., Fortov V.E.*
- 8.11 Experimental study of the transition of the dusty structure from monolayer to multilayer state in RF discharge plasma.  
*Vasilieva E.V. (JIHT RAS, Moscow, Russia), Timirkhanov R.A., Gavrikov A.V., Petrov O.F., Fortov V.E.*
- 8.12 Abnormal kinetic temperature of charged particles in crystalline dusty plasmas. *Norman G.E., Stegailov V.V., Timofeev A.V. (JIHT RAS, Moscow, Russia)*
- 8.13 Ion heating in two-component dusty plasma of noble gases.  
*Daniyarov T.T. (IETP KazNU, Almaty, Kazakhstan), Ramazanov T.S., Maiorov S.A., Dosbolayev M.K., Zhankarashev E.B.*
- 8.14 Macroparticle motion in ordered dusty plasma structures.  
*Piskunov A.A. (PetrSU, Petrozavodsk, Russia), Podryadchikov S.F., Khakhaev A.D., Scherbina A.I.*

- 8.15 Coulomb clusters of diamagnetic particles levitating in nonuniform magnetic fields.  
*D'yachkov L.G. (JIHT RAS, Moscow, Russia), Savin S.F., Vasiliev M.M., Petrov O.F., Fortov V.E.*
- 8.16 Dust plasma structures in DC glow discharges under magnetic field. *Vasiliev M.M. (JIHT RAS, Moscow, Russia), Dyachkov L.G., Antipov S.N., Petrov O.F., Fortov V.E.*
- 8.17 Binary bilayers in complex plasmas.  
*Donkó Z. (MTA-SZFKI, Budapest, Hungary), Kalman G.J., Hartmann P., Kyrkos S., Rosenberg M.*
- 8.18 Influence of dust particles concentration on plasma parameters in DC discharge. *Sukhinin G.I. (IT SB RAS, Novosibirsk, Russia), Fedoseev A.V., Antipov S.N., Petrov O.F., Fortov V.E.*
- 8.19 Viscoplastic flow of crystal-like dusty plasma structures.  
*Gavrikov A.V. (JIHT RAS, Moscow, Russia), Timirkhanov R.A., Goranskaya D.N., Ivanov A.S., Petrov O.F., Fortov V.E.*
- 8.21 Screening a microparticle's charge in a non-equilibrium plasma with two positive ion species.  
*Derbenev I.N. (TRINITI, Troitsk, Russia), Filippov A.V.*
- 8.22 Influence of neutrals on nano- and microscale particle charging in dusty ionosphere. *Kopnin S.I. (IDG RAS, Moscow, Russia), Popel S.I., Morzhakova A.A.*
- 8.23 Increase of kinetic energy of dusty cluster particles due to parametric instability caused by nanosecond electric pulses.  
*Vasilyak L.M. (JIHT RAS, Moscow, Russia), Fortov V.E., Polyakov D.N., Thomas H.M., Vetchinin S.P., Morfill G.E., Ivlev A.V., Pustynnik M. Yu.*
- 8.24 Formation of dusty layers in linear electrical field: criteria and numerical simulation.  
*Koss X.G. (JIHT RAS, Moscow, Russia), Vaulina O.S.*
- 8.25 Structure of dust particles in dusty plasma confined in cylinders.  
*Totsuji H. (Okayama Univ., Okayama, Japan), Totsuji C.*
- 8.26 Electrostatic interaction of spherical microparticles in cases of constant charges and constant surface potentials.  
*Filippov A.V. (TRINITI, Troitsk, Russia)*

- 8.32 Effects of current modulating in complex low temperature plasma.  
Gogolev A.E. (*PetrSU, Petrozavodsk, Russia*), *Khakhaev A.D.*
- 8.35 Numerical study of heat capacity in dissipative two-dimensional Yukawa systems.  
Khrustalyov Yu.V. (*JIHT RAS, Moscow, Russia*), *Vaulina O.S.*
- 8.36 Design of a system for cesium coated dust. Kausik S.S. (*CPP, Sonapur, India*), *Bandyopadhyay M., Chakraborty M., Kakati B., Baishya A., Hazarika H.C., Saikia B.K., Kaw P.K.*

# NOTES