

International Workshop on High Energy Proton Microscopy

Wednesday, April 24th *(Studien-Info-Zentrum SIZ)*

8:00–8:30 Registration

8:45–9:00 Workshop Opening

9:00–10:40 Session 1 – Chair: Alexander Golubev

- ***Charges Particle Radiography – a new way to look inside of things (20' + 5')***
 - Christopher Morris, Los Alamos National Laboratory
 - ***Proton radiographic simulation and analysis (20' + 5')***
 - Matthew Freeman, Los Alamos National Laboratory
 - ***PRIOR – Proton Microscope for FAIR (20' + 5')***
 - Dmitry Varentsov, GSI Darmstadt
 - ***Potential upgrade of Los Alamos Proton Radiography facility (20' + 5')***
 - Alexander Saunders, Los Alamos National Laboratory
 - ***The x7 Magnifier Proton Microscope at LANL (20'+5')***
 - Fesseha Mariam, Los Alamos National Laboratory
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11:05–11:30

Coffee Break

11:30–12:45 Session 2 – Chair: Vincent Bagnoud

- ***Numerical simulation of high-energy proton microscopy for HED research (20' + 5')***
 - Alexander Golubev, Institute for Theoretical and Experimental Physics (ITEP)
 - ***Accurate density measurements for equation of state of non-ideal plasma by proton radiography (20' + 5')***
 - Nikolay Shilkin, Institute of problems of Chemical Physics (IPCP RAS)
 - ***Residual dose rate estimate for HED at FAIR experiment at HHT (20' + 5')***
 - Vasily Volkov, NRC “Kurchatov Institute” – ITEP
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12:45–14:15 Lunch Break

(self paying)

14:15–15:30 Session 3 – Chair: Dmitry Varentsov

- ***Study of explosively driven phase transitions in molecular liquids by proton radiography (20' + 5')***
 - Dmitry Nikolaev, Institute of problems of Chemical Physics (IPCP RAS)
- ***Proton porbing of high intensity laser matter interaction employing the dual beam ARCTURUS laser system (20' + 5')***
 - Rajendra Prasad, ILPP, Heinrich-Heine-Universität Düsseldorf
- ***The PaNTERA Project – Proton Radiography towards medical applications (20' + 5')***
 - Martin Schanz, GSI Darmstadt

15:30–16:00

Coffee break

16:00–16:50 Session 4 – Chair: Stephan Neff

- ***Hard X-ray and Proton Radiography of Underwater Electrical Wire Explosion (20' + 5')***
 - Alexander Müller-Münster, Goethe University Frankfurt
- ***Metal explosive chambers and proton radiography (20' + 5')***
 - Nikolay Shilkin, Institute of Problems of Chemical Physics (IPCP RAS)

20:00 Dinner at Stadtwirtschaft

(self-paying)

Thursday, April 25th *(where)*

9:00 Welcome Speech *(Studien-Info-Zentrum SIZ)*

by Prof. Dr. Klaus-Dieter Barbknecht, Principal TU Bergakademie Freiberg

10:00-13:30 Bus transfer to visit the subterranean shock wave laboratory Freiberg

13:30–15:00 Lunch Break *(self paying)*

15:00–15:50 Session 5 – Chair: Thomas Schlothauer *(Studien-Info-Zentrum SIZ)*

- **Shock effects in porous matter-explosive technologies versus Laser and particle beams (20' + 5')**
 - Thomas Schlothauer, TU Bergakademie Freiberg
 - **Physics of explosively driven warm dense matter with strong coupling and proton radiography (20' + 5')**
 - Victor Mintsev, Institute of Problems of Chemical Physics (IPCP RAS)
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15:50–16:20 **Coffee break**

16:20–17:10 Session 6 – Chair: Victor Mintsev *(Studien-Info-Zentrum SIZ)*

- **Shock-wave loading of silicon nitride porous samples (20' + 5')**
 - Vladislav Yakushev, Institute of Problems of Chemical Physics (IPCP RAS)
 - **Investigation of heterogeneous anisotropic materials under shock waves for experiments at PRIOR (20' + 5')**
 - Valentina Mochalova, Institute of Problems of Chemical Physics (IPCP RAS)
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20:00 Conference Dinner at Terra Mineralia

Friday, April 26th *(Studien-Info-Zentrum SIZ)*

9:00–13:00 Discussion

- ***Explosive drivers for dynamic experiments with PRIOR***
 - Science case
 - Technical and administrative/legal requirements for operation at GSI/FAIR
 - Next steps (Technical design report, etc.)
- ***Light gas gun (originally project of Dieter Hoffmann's group at TU Darmstadt, currently unfinished)***
 - How do we proceed?
- ***Other drivers (exploding wire, PaNTERA, laser-driven shocks)***
 - Discuss science case and technical feasibility