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Tokyo Institute of Technology
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PUBLICATIONS

The Generation of High-Quality, Intense Ion Beams by Ultra-Intense Lasers Plasma
M. Roth, A. Blazevic, M. Geissel, T. Schlegel, T. E. Cowan, M. Allen, J.-C. Gauthier, P. Audebert, J. Fuchs, J. Meyer-ter-Vehn, M. Hegelich, S. Karsch, A. Pukhov
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F. B. Rosmej, D. H. H. Hoffmann, W. Süß, A. E. Stepanov, Yu. A. Satov, Yu. B. Smakovskii, V. K. Roerich, S. V. Khomenko, K. N. Makarov, A. N. Starostin, A. Ya. Faenov, I. Yu. Skobelev, A. I. Magunov, M. Geissel, P. Pirzadeh, W. Seelig, T. A. Pikuz, R. Bock, T. Letardi, F. Flora, S. Bollanti, P. Di Lazzaro, A. Reale, A. Scafati, G. Tomassetti, T. Auguste, P. d' Oliveira, S. Hulin, P. Monot, B. Yu. Sharkov
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Implosion of Multi-Layered Cylindrical Targets Driven by Intense Heavy Ion Beams
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generation
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targets
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Analytic Model for Studying Heavy Ion Imploded Cylindrical Targets

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Energy Loss Dynamics of Intense Heavy Ion Beams Interacting with Solid Targets

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Methods of Charge State Analysis of Fast Ions inside Matter Based on their X-ray Spectral Distribution

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Funneling with the two beam RFQ
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M. Galonska, K. Volk, U. Ratzinger
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Two-color stabilization of atomic hydrogen in circularly polarized laser pulses
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Fullerenes and molecules in strong laser pulses: collective dynamics, field ionization and harmonic generation
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Fast ignition of fusion pellets with superintense lasers: Concepts, problems, and perspectives
P. Mulser
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Scattering of magnetized electrons by ions
C. Toepffer
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G. Zwicknagel, C. Toepffer

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G. Zwicknagel

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C. Heerlein, G. Zwicknagel, C. Toepffer

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Stopping power of nonideal, partially ionized plasmas

D.O. Gericke, M. Schlanges, Th. Bornath

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Electrical conductivity of nonideal carbon and zinc plasmas: Experimental and theoretical results

J. Haun, H.-J. Kunze, S. Kosse, M. Schlanges, R. Redmer

Phys. Rev. E65, 046407 (2002)

Kinetic and correlation energies and distribution functions of dense plasmas

W.D. Kraeft, M. Schlanges, J. Vorberger, H.E. DeWitt

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Fluid variational theory for pressure dissociation in dense hydrogen: Multicomponent reference system and non-additive effects

H. Juranek, R. Redmer, Y. Rosenfeld

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CONFERENCE CONTRIBUTIONS

Snowbird, Utah, USA: Conference on Relativistic Optics (Quantum Electronic Conference), January 6-11, 2002

M. Roth
Ion Acceleration by Ultra-Intense Lasers

Hayama, Kanagawa, Japan, International: Symposium of Super-Strong Field Interactions, March 13-16, 2002

M. Roth
Ion Acceleration by Ultra Intense Lasers – a Detailed Study on Beam Quality

Gaitlinburg, USA: 13th International Conference on Atomic Physics in Plasmas, April 22-25, 2002

D.O. Gericke, M. Schlages, Th. Bornath
Nonideality Effects on the Stopping Power of Partially Ionized Plasmas

F.B. Rosmej, A. Calisti, B. Talin, R. Stamm, W. Süß, M. Geißel, D.H.H. Hoffmann, A.Ya. Faenov, T.A. Pikuz
Observation of two-electron transitions in dense non-Maxwellian laser-produced plasmas and their use as diagnostic reference lines

Gaitlinburg, USA: 3rd International Conference on Atomic and Molecular Data and Their Applications, April 24-27, 2002

F.B. Rosmej, R. Stamm, V.S. Lisitsa
Charge-exchange coupling of interpenetrating plasmas in magnetic fusion

L'Aquila, Italy: Convegno Nazionale "La Fisica del Plasma", May 20-22, 2002

P. Mulser
Fast Coronal Ignition

Moscow, Russia: 14th International Symposium on Heavy Ion Inertial Fusion, May 26-31, 2002

A. Blazevic
Applications of intense ion beams generated by short pulse lasers

A. Tauschwitz, R. Birkner, R. Kobloch, S. Neff, C. Niemann, D. Penache, R. Presura, D. Ponce, S. Yu

Stability of gas discharge channels for final beam transport

O.N. Rosmej, J. Wieser, F.B. Rosmej, M. Geißel, A. Blazevic, E. Brambring, M. Roth, E. Dewald, A. Golubev, V. Turtikov, A. Fertman, N. Borisenko, V.P. Shevelko

Space Resolved Charge State Distribution of Swift Heavy Ions in Matter

J. Jacoby, R. Bock, C. Constantin, E. Dewald, D.H.H. Hoffmann, A. Kozyreva, C. Niemann, F.B. Rosmej, M. Roth, T. Schlegel, N.A. Tahir, A. Tauschwitz, S. Udrea, D. Varentsov, J. Wieser

Ion Beam Produced High Energy Density in Matter Experiments at GSI

A. Tauschwitz, R. Birkner, D.H.H. Hoffmann, R. Knobloch, S. Neff, C. Niemann, D. Penache, R. Presura, D. Ponce, F.B. Rosmej, S. Yu

Final Beam Transport in Discharge Channels – Status and Perspectives

C. Niemann, A. Tauschwitz, D. Penache, S. Neff, F.B. Rosmej, R. Birkner, R. Knobloch, C. Constantin, J. Jacoby, R. Presura, D.H.H. Hoffmann, S.S. Yu, W.M. Sharp, D.M. Ponce

Diagnostics of Discharge Channels for Neutralized Beams

M. Geißel, A. Blazevic, E. Brambrink, A.Ya. Faenov, D.H.H. Hoffmann, T. Pikuz, P. Pirzadeh, F.B. Rosmej, O.N. Rosmej, M. Roth, T. Schlegel, W. Seelig, J. Wieser

Target Characterization for the Investigation of the Energy Loss of Heavy Ions in Laser Produced Plasmas

F. B. Rosmej, O. Renner, E. Krousky, J. Wieser, M. Schollmeier, J. Krasa, L. Laska, B. Kralikova, J. Skala, M. Bodnar, O. N. Rosmej, D.H.H. Hoffmann

Velocity analysis of highly charged radiating target ions generated by intense laser beams

F. B. Rosmej, R. More, O. N. Rosmej, J. Wieser, N. Borisenko, M. Geissel, A. Blazevic, D. H. H. Hoffmann, V. Turtikov, A. Fertman

Methods of charge state analysis of fast ions inside matter based on their x-ray spectral distribution

K. Weyrich

Interaction of Heavy-Ion-Beams with Shockwave-driven, Strongly-coupled Plasmas

O. Rosmej

X-ray projectile and target radiation

U. Ratzinger

Intense heavy ion linacs

R. Tiede, U. Ratzinger

Low energy DTL sections for intense Bi 1^+ beams

H. Zimmermann, A. Bechtold, A. Schempp, J. Thibus

Funneling with the two beam RFQ

G. Zwicknagel
Nonlinear Stopping of Highly Charged Heavy Ions in Plasmas

G. Zwicknagel, M. Knaup, P.-G. Reinhard and C. Toepffer
Semi-quantal Simulations of Hydrogen under Extreme Conditions

Aspen, Colorado, USA: 8th International Conference on X-ray Lasers, May 27-31, 2002

F. Brandl, G. Pretzler, F. B. Rosmej, D. Habs, E. Fill
High intensity regime of x-ray generation for innershell photopumping

Hamburg, Germany: International Conference on Warm Dense Matter, June 3-5, 2002

F. B. Rosmej
Space resolved x-ray spectroscopy

W.D. Kraeft, M. Schlanges, J. Vorberger, H.E. DeWitt
Thermodynamic functions of two-component plasmas at any degeneracy

D.O. Gericke, M.S. Murillo, M. Schlanges
Relaxation of Warm Dense Two-Temperature Plasmas

R. Redmer, S. Kuhlbrodt, H. Juranek
Quantum transport theory for warm dense matter

Paris, France: European Particle Accelerator Conference, June 3-7, 2002

H. Zimmermann, A. Bechtold, A. Schempp, J. Thibus
Funneling with the two beam RFQ

Berkeley, USA: International Conference on Spectral Line Shapes ICSLS 2002, June 3-7, 2002

A. Calisti, F.B. Rosmej, B. Talin, C. Mossé, S. Ferri, M. Geißel, D.H.H. Hoffmann, A.Ya. Faenov, T.A. Pikuz
Stark Broadening Model for Ionic Emitter Spectroscopy and Application to Li-like Rydberg Satellite Series in Laser Produced Plasmas

Montreux, France: EPS Conference on Plasma Physics, June 17-21, 2002

M. Roth
The generation of high-quality, intense ion beams by ultra intense lasers

Albuquerque, NM, USA: Int Conf. High Power Particle Beams, June 23-28, 2002

A. Tauschwitz, C. Niemann, D. Penache, R. Birkner, D.H.H. Hoffmann, R. Kobloch, S. Neff,
R. Presura, D. Ponce, F. Rosmej, S. Yu

Plasma Channel Transport for Heavy Ion Fusion: Investigation of Beam Transport, Channel
Initiation and Stability

Hollywood, CA, USA: Int. Power Modulator Conference, June 30 – July 3, 2002

A. Tauschwitz, E. Dewald, B. Becker-de Mos, S. Samek, I. Reinhard, T. Kühl
Status of the Pulsed Power System for the PHELIX Kilojoule/Petawatt-Laser at GSI
Darmstadt

General Atomics, San Diego, USA: ARIES Project meeting, July 1-2, 2002

S. Neff

Operating window for channel-assisted pinch propagation

Bratislava, Slovak Republic: LPHYS 2002, July 1-5, 2002

D. Bauer

Multi-color stabilization and harmonic generation in intense laser fields

**Dubna, Russia: DAAD Summer School on Quantum Many-Particle Systems, July 22 -
August 9, 2002**

R. Redmer

Equation of State and Transport Properties in Warm Dense Matter

Dresden, Germany: Progress in nonequilibrium Greens functions, August 19-23, 2002

J. Vorberger, M. Schlanges, W.D. Kraeft, H.E. DeWitt
Thermodynamic functions of dense quantum plasmas

M. Schlanges, P. Hilse, Th. Bornath, D. Kremp
Correlated quantum plasmas in strong laser fields

**Santa Fe, New Mexico, USA: Int. Conference on Strongly Coupled Coulomb Systems,
September 2-6, 2002**

N. Tahir

Intense Heavy Ion Beams as a Tool to Create Strongly Coupled Plasmas

G. Zwicknagel, M. Knaup, P.-G. Reinhard, C. Toepffer
Wave-Packet Molecular Dynamics Simulations of Warm Dense Hydrogen

G. Zwicknagel, T. Pschiwul
Numerical Simulation of the Dynamic Response of Two-Component Model Plasmas

G. Zwicknagel, B. Moellers, M. Walter, C. Toepffer
Energy Loss of Ions in a Magnetized Electron Plasma

M. Schlanges, J. Vorberger, H. E. DeWitt, W. D. Kraeft
Equation of state and correlation energy of dense plasmas

Th. Bornath, M. Schlanges, P. Hilse, D. Kremp
Correlation and quantum effects on collisional absorption in dense laser-produced plasmas

P. Hilse, M. Schlanges, Th. Bornath, and D. Kremp
Inverse bremsstrahlung for dense weakly coupled plasmas in strong laser fields

Bruxelles, Belgium: New directions in laser matter interaction, September 5-7, 2002

P. Mulser
Superintense laser-solid matter interaction

St. Malo, France: Radiative Properties of Hot Dense Matter, September 16-20, 2002

F.B. Rosmej, A. Calisti, B. Talin, C. Mossé, S. Ferri, R. Stamm, M. Geißel, D.H.H. Hoffmann, A.Ya. Faenov, T.A. Pikuz
Analysis of Spectral Line Shapes and Intensities Originating from Rydberg Autoionizing Levels

Moscow, Russia: ECLIM 2002, October 7-11, 2002

O. Rosmej
Foam target performance: Projectile spectroscopy for investigation of ion stopping processes

Princeton, USA: ARIES Project meeting at the Princeton Plasma Physics Laboratory, October 2-4, 2002

S. Neff
Assisted pinch mode for heavy ion beam transport

Denton, Texas, USA: CAARI 2002 (Conf. on the Application of Accelerators in Research and Industry), November 12-16, 2002

Abel Blazevic

Charge state dependence on the stopping of swift heavy ions in the non-equilibrium region

Bangalore, Karnataka, India: International Conference on the Frontiers of Plasma Physics and Technology, December 9-14, 2002

P. Mulser

Fast ignition and energy transport

The physics of collective absorption of superintense laser radiation

D. Bauer

Plasma formation through field ionization of atoms, molecules, and clusters

Coimbatore, Tamil Nadu, India: PLASMA 2002 - 17th National Symposium on Plasma Science and Technology, December 16-19, 2002

P. Mulser

Fast ignition and energy transport

D. Bauer

Plasma generation in intense laser fields

DIPLOMA- AND PHD-THESIS

G. Schaumann

Erweiterte diagnostische Verfahren zur Charakterisierung lasererzeugter Plasmatargets für schwere Ionen

Diploma-Thesis, TU Darmstadt, August 2002

U. Geissler

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