

Publication list of Kathrin Wünsch

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Peer-reviewed publications

- *X-ray Thomson scattering on shocked graphite*,
D. Kraus, A. Otten, A. Frank, V. Bagnoud, A. Blažević, D.O. Gericke, G. Gregori, A. Ortner, G. Schaumann, D. Schumacher, J. Vorberger, F. Wagner, K. Wünsch and M. Roth,
High Energy Density Physics **8**, 46 (2012)
- *Analysis of Thomson scattering data from strongly-driven hydrogen*,
D.A. Chapman, J. Vorberger, K. Wünsch and D.O. Gericke,
High Energy Density Physics, in press: doi:10.1016/j.hedp.2011.11.013
- *X-ray Scattering as a probe for warm dense mixtures and high-pressure miscibility*,
K. Wünsch, J. Vorberger, G. Gregori, and D.O. Gericke,
EPL **94**, 25001 (2011)
- *Screening of ionic cores in partially ionized plasmas within linear response*,
D.O. Gericke, J. Vorberger, K. Wünsch, and G. Gregori,
Phys. Rev. E **81**, 065401(R) (2010)
- *Structural Properties of Warm Dense Matter*,
D.O. Gericke, K. Wünsch, A. Grinenko and J. Vorberger,
Journal of Physics: Conference Series **220**, 012001 (2010)
- *Measurements of Ionic Structure in Shock Compressed Lithium Hydride from Ultrafast X-Ray Thomson Scattering*,
A.L. Kritcher, P. Neumayer, C.R.D. Brown, P. Davis, T. Döppner, R.W. Falcone, D.O. Gericke, G. Gregori, B. Holst, O.L. Landen, H.J. Lee, E.C. Morse, A. Pelka, R. Redmer, M. Roth, J. Vorberger, K. Wünsch and S.H. Glenzer
Phys. Rev. L **103**, 245004 (2009)
- *Measurement of short-range electron correlations in shock-compressed plastic by short-pulse x-ray scattering*,
B. Barbreil, M. Koenig, A. Benuzzi-Mounaix, E. Brambrink, C.R.D. Brown, D.O. Gericke, B. Nagler, M. Rabec le Gloahec, D. Riley, C. Spindloe, S.M. Vinko, J. Vorberger, J. Wark, K. Wünsch, and G. Gregori,
Phys. Rev. L **102**, 165004 (2009)
- *Modelling the Scattering of X-Rays in Warm Dense Matter*,
D.O. Gericke, K. Wünsch, and J. Vorberger,
Nuclear Instruments and Methods in Physics Research A **606**, 142 (2009)

- *Ion Structure in Warm Dense Matter: Benchmarking hypernetted-chain equations by first-principle simulations*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
Phys. Rev. E **79**, 010201(R) (2009)
- *Ion Structure in Dense Plasmas: MSA versus HNC*,
K. Wünsch, J. Vorberger, G. Gregori and D.O. Gericke,
J. Phys. A: Math. Theor. **42**, 214053 (2009)
- *Probing Warm Dense Lithium by Inelastic X-Ray Scattering*,
E. Garcia Saiz, G. Gregori, D.O. Gericke, J. Vorberger, B. Barbreil, R.J. Clarke, R.R. Freeman,
S.H. Glenzer, F.Y. Khattak, M. Koenig, O.L. Landen, D. Neely, P. Neumayer, M.M. Notley,
A. Pelka, D. Price, M. Roth, M. Schollmeier, R.L. Weber, L. van Woerkom, K. Wünsch, and
D. Riley
Nature Physics **4**, 940 (2008)
- *Structure of Strongly Coupled, Multi-Component Plasmas*,
K. Wünsch, P. Hilde, M. Schlanges, and D.O. Gericke,
Phys. Rev. E **77**, 056404 (2008)
- *Ion Structure for X-Ray Thomson Scattering in Dense Fusion Plasmas*,
K. Wünsch, J. Vorberger, M. Schlanges, and D.O. Gericke,
Journal of Physics: Conference Series **112**, 032077 (2008)

Unrefereed publications

- *Multi-component effects on the x-ray scattering signal from warm dense matter*,
J. Vorberger, K. Wünsch, D.O. Gericke and G. Gregori,
Central Laser Facility, Annual Report 2009-2010, Rutherford Appleton Laboratory (RAL),
Didcot, United Kingdom, pp. 154-156 (2010)
- *Effects of Core Electrons on the Ionic Structure of Warm Dense Matter*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
High energy density physics with intense ion and laser beams, Annual Report 2008,
Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany, p. 38 (2009)
- *Ab initio simulations for X-ray Thomson scattering*,
J. Vorberger, K. Wünsch, and D.O. Gericke,
Central Laser Facility, Annual Report 2008-2009, Rutherford Appleton Laboratory (RAL),
Didcot, United Kingdom pp. 113-116 (2009)
- *Hypernetted chain calculations for the equation of state*,
K. Wünsch, J. Vorberger, M. Schlanges, W.-D. Kraeft, and D.O. Gericke,
High energy density physics with intense ion and laser beams, Annual Report 2007,
Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany, p. 64 (2008)
- *Ab initio simulations for X-ray scattering diagnostics*,
J. Vorberger, K. Wünsch, and D.O. Gericke,
High energy density physics with intense ion and laser beams, Annual Report 2007,
Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany, p. 61 (2008)

- *Structure of strongly coupled electron-ion systems*,
K. Wünsch, M. Schlanges, and D.O. Gericke,
High energy density physics with intense ion and laser beams, Annual Report 2006,
Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany, p. 70 (2007)
- *X-ray scattering measurement of the long wavelength limit of the static response function in a dense Li plasma*,
E. Garcia Saiz, F.Y. Khattak, D. Riley, G. Gregori, R.J. Clarke, M.M. Notley, D. Neely,
B. Barbreil, M. Koenig, R.L. Weber, R.R. Freeman, L. van Woerkom, A. Pelka,
M. Schollmeier, M. Roth, P. Neumayer, D. Price, S.H. Glenzer, O.L. Landen, J. Vorberger,
K. Wünsch, and D.O. Gericke,
Central Laser Facility, Annual Report 2006-2007, Rutherford Appleton Laboratory (RAL),
Didcot, United Kingdom, pp. 10-14 (2007)

Oral presentations

- *X-Ray Thomson scattering as a diagnostic tool for Warm Dense Matter*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
Seminar of the Plasma Physics Group at GSI Darmstadt, Germany (2011)
- *Diagnostics of High-Energy-Density Matter by X-ray Thomson Scattering*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
Inertial Fusion Sciences and Applications (IFSA), Bordeaux, France (2011)
- *Application of Scattering as Warm Dense Matter Diagnostics*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
31st int. Workshop on Physics of High Energy Density in Matter, Hirschegg, Austria (2011)
- *X-ray Scattering of multicomponent warm dense matter*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
29th int. Workshop on Physics of High Energy Density in Matter, Hirschegg, Austria (2009)
- *Thomson scattering in warm dense matter*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
Spring meeting at the German Physical Society (DPG), Darmstadt, Germany (2008)

Poster presentations

- *Theory of X-ray Scattering from Warm Dense Mixtures*,
K. Wünsch, J. Vorberger and D.O. Gericke,
International Workshop on Warm Dense Matter, Pacific Grove, California, USA (2011)
- *X-ray scattering as a diagnostic tool for warm dense matter studies*,
K. Wünsch, D. Chapman J. Vorberger and D.O. Gericke,
5th int. conference on the Frontiers of Plasma Physics and Technology, Singapore (2011)
- *X-ray scattering as a diagnostic tool for WDM experiments*,
K. Wünsch, D. Chapman J. Vorberger and D.O. Gericke,
Spring meeting at the German Physical Society (DPG), Kiel, Germany (2011)

- *Multicomponent Effects on the X-ray Scattering Signal from Warm Dense Matter*,
K. Wünsch, J. Vorberger and D.O. Gericke,
30th int. Workshop on High Energy Density in Matter, Hirschegg, Austria (2010)
- *X-ray Scattering in Multicomponent Warm Dense Matter*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
IoP Plasma Physics Conference, University of Warwick, Coventry, United Kingdom (2009)
- *Measurement of short-range electron correlations in shock-compressed plastic by short-pulse x-ray scattering*,
B. Barbrel, M. Koenig, A. Benuzzi-Mounaix, C. Blancard, E. Brambrink, C.R.D. Brown,
D.O. Gericke, G. Fassurier, B. Nagler, S. Vinko, D. Riley, J. Vorberger, K. Wünsch, and
G. Gregori,
International workshop on Warm Dense Matter, Hakone, Japan (2009)
- *Ion structure in warm dense matter: ab initio simulations versus HNC*,
K. Wünsch, J. Vorberger, and D.O. Gericke,
Strongly Coupled Coulomb Systems (SCCS), Camerino, Italy (2008)
- *Theory and ab initio simulations for x-ray scattering in warm dense matter*,
J. Vorberger, K. Wünsch, and D.O. Gericke,
Strongly Coupled Coulomb Systems (SCCS), Camerino, Italy (2008)
- *Equation of state for dense strongly coupled hydrogen*,
W.-D. Kraeft, K. Wünsch, D.O. Gericke, and J. Vorberger
Strongly Coupled Coulomb Systems (SCCS), Camerino, Italy (2008)
- *Equation of state for plasmas with strongly coupled ions*,
J. Vorberger, K. Wünsch, M. Schlanges, W.-D. Kraeft and D.O. Gericke,
Spring meeting at the German Physical Society (DPG), Darmstadt, Germany (2008)
- *Equation of state for plasmas with strongly coupled ions*,
J. Vorberger, K. Wünsch, M. Schlanges, W.-D. Kraeft and D.O. Gericke,
28th int. Workshop on High Energy Density in Matter, Hirschegg, Austria (2008)
- *Probing Dense Fusion Plasmas by X-ray Thomson Scattering*,
J. Vorberger, K. Wünsch, M. Schlanges, W.-D. Kraeft and D.O. Gericke,
International Conference on Inertial Fusion Science and Applications (IFSA),
Kobe, Japan (2007)
- *Struktur in stark gekoppelten Mehrkomponenten-Plasmen*
(Structure in strongly coupled multicomponent plasmas),
K. Wünsch, P. Hilde, M. Schlanges, and D.O. Gericke,
Spring meeting at the German Physical Society (DPG), Düsseldorf, Germany (2007)