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Computational Polymer Physics
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CURRICULUM VITAE

BIRTHPLACE AND MARITAL STATUS:

Born March 21, 1965 in Rheinhausen, near Cologne, Germany,
married April 12, 1990 in Chanceaux, France, divorced 1998,
two daughters *24 Dec 1993, *1 Apr 2001 and a son *2 Jul 1992
German and Swiss Citizenships

EDUCATION AND UNIVERSITY STUDIES:

08/75 — 06/84	4 years primary school, 9 years grammar school, Abitur 1.9 (Moers/D)
10/85 — 05/91	Mathematics and Physics, Technical University (TU) Berlin/D
06/91	Physics diplome (best grade)
10/94	Graduate certificate 1.0 (Graduiertenkolleg Polymerwerkstoffe)
12/94	Dr. rer. nat. (summa cum laude), Supervisor: Prof. Dr. Siegfried Hess Thesis subject: Rheology and structure of polymer melts

SCIENTIFIC AWARDS:

10/94	Kurt-Ueberreiter Prize 1994 Society of Polymer Research, Berlin
05/95	First Rheology Prize 1995 German Society of Rheology
06/95	Carl-Ramsauer Prize 1995 Daimler-Benz Industry
07/01	Habilitation in Theoretical Physics Physics Department, TU Berlin
01/05	Habilitation in Computational Polymer Physics Department of Materials, ETH Zurich

OTHER AWARDS:

01/15	Member of the Top 100 reviewers list 2014, <i>Macromolecules</i> /ACS
02/18	Outstanding Reviewer Award 2017, <i>Journal of Non-Newtonian Fluid Mechanics</i>
02/18	Top Reviewer 2018, <i>ACS Macro Letters</i>
09/18	Publons Peer Review Award 2018 in Chemistry
09/18	Publons Peer Review Award 2018 in Physics
01/19	Member of the Top 20 reviewers list 2018, <i>Macromolecules</i>

EMPLOYMENTS:

02/86 — 09/91	Violin player , RIAS (Radio) Sinfony Orchestra Berlin
02/86 — 09/91	Teacher for students , TU Berlin, Physics Department
07/91 — 12/92	Assistant Researcher , DFG, Special research area (Sfb) 335 Anisotropic fluids
10/93 — 03/97	Scientific Assistant , TU Berlin, Institute for Theoretical Physics, Physics Department
03/95 — 07/96	Invited Professor , Univ. Metz/F, Laboratoire de Physique des Liquides et Interfaces (LPLI)
02/96 — 06/96	Assistant Professor , Univ. Strasbourg/F, Institute Charles Sadron (CRM/EAHP)
05/96 — 06/06	Invited Researcher , Cambridge/UK, Isaac Newton Institute
10/96 — 12/01	Lehrbeauftragter (Lecturer), TU Berlin, Theoretical, Statistical and Computational Physics
02/97 — 03/97	Invited Professor , Univ. Strasbourg/F, Ecole chimie, polymeres et materiaux (ECPM)
11/97 — 12/06	Oberassistent , Polymer Physics, Dept. Materials Science, ETH Zürich
10/98 — 02/03	Senior Researcher (C1), TU Berlin, Institute of Theoretical Physics
07/01 — 12/08	Privatdozent (Lecturer) for Theoretical Physics, Computer simulation, and Statistical Physics of complex fluids, TU Berlin
03/03 – present	Privatdozent (Lecturer) for Computational Polymer Physics, ETH Zürich
01/07 – present	Senior Researcher , Polymer Physics, Dept. Materials Science, ETH Zürich
12/06 – present	Professor Computational Polymer Physics, ETH Zürich

FELLOWSHIPS:

01/93 — 09/93	PhD fellowship , Graduiertenkolleg <i>Polymerwerkstoffe</i> (DFG)
04/97 — 11/97	Postdoc fellowship , MINERVA foundation, with Prof. Avinoam Ben-Shaul, Fritz Haber Center for Molecular Dynamics, Jerusalem/IL
11/97 — 12/97	Habilitation fellowship , German Research Foundation (DFG)

INVITED STAYS (SELECTION):

09/94	Inst. Charles Sadron (CRM/EAHP) (Prof. R. Muller) Strasbourg/F
02/95	Inst. Charles Sadron (CRM/EAHP) (Prof. R. Froehlich) Strasbourg/F
08/95	Inst. of Pathology, Univ. Cologne (Prof. G.R.F. Krüger) Cologne/D
01/96	MPI for Polymer Research (Prof. K. Kremer) Mainz/D
03/96	Weizmann Institute (Prof. A. Ben-Shaul) Jerusalem/IL
07/96	Dept. Mat. Sci., ETHZ Zürich (Prof. H.C. Öttinger) Zürich/CH
11/96	Techn. Univ. München (Prof. E. Sackmann) Garching/D
12/96	Dept. Mat. Sci., ETHZ Zürich (Prof. P. Schurtenberger) Zürich/CH
03/97	DSM Research Company (Dr. R. Meier) Geleen/NL
10/99	MPI for Physics of Complex Systems (Dr. B. Dünweg) Dresden/D
01/01	MPI for Polymer Research (Prof. K. Kremer) Mainz/D
03/02-04/02	Institute of Theoretical Physics, UC Santa Barbara/USA
10/03	Center for Applied Mathematics (Prof. B. Leimkuhler) Leicester/UK
12/04	Institut Henri Poincare (Prof. M. Tuckermann) Paris/F
03/06	BASF research laboratories (Prof. H.M. Laun) Ludwigshafen/D
04/08	Polymer IRC, Bradford and Leeds/U.K.
02/09	Institute for Mathematics and Its Applications (IMA), Minnesota/USA
10/09	University of Sydney (Profs. Roger Tanner, Howard See) Sydney/AUS
09/11	Kyoto University (Prof. Ryoichi Yamamoto, Takashi Taniguchi), Kyoto/JAP

PROJECTS, GRANTS (SELECTION)

06/19 — 12/22	<i>VISIONNANO - Viscoelastic properties, entanglements, and polymer dynamics in ionic nanocomposites</i> SNF 200021L-185052, with Argyrios Karatrantos (CHF 283,000)
02/15 — 01/18	<i>Surface rheology of block-copolymer stabilized interfaces</i> SNF 200021.156106, with L. Sagis, P. Fischer, P. Ilg (CHF 194,000)
05/13	<i>Compute nodes for computing cluster</i> ETH grant (CHF 300,000)
07/10 — 06/11	<i>Coarse-grained models of competitive interactions in biophysical systems: filamentous networks, gels, biopolymer mixtures, and the nuclear pore complex</i> ETH Research grant ETH-17 10-1 (CHF 53,000)
12/09 — 11/12	<i>Nano-crystalline porous anatase TiO₂ for environmental applications</i> SNF SCOPES IZ73Z0-128169, with I. Stankovic/Belgrade (CHF 130,000)
07/09 — 03/10	<i>Computer-aided design of nanostructured interfaces for biological sensors</i> CSCS XT3 (50000 cpu h/month)
05/08 – present	<i>Beowulf cluster</i> (CHF 1,120,000 in 2008-2009) with M. Parrinello, M. Troyer, H. Katzgraber (grant provided by ETH Schulleitung)
09/07 – present	<i>From nanoscale simulation to process engineering: Bridging length scales in flows of polymeric fluids</i> (NSF-PIRE) at Univ. Tennessee, TN, USA (USD 190,000 in 2007-2009)
07/07 — 06/08	<i>Computer-aided design of nanostructured interfaces for biological sensors</i> CSCS P575 (2000) and XT3 (30000 cpu h/month)

05/06 — 12/09	<i>New controlled release systems produced by self-assembly of biopolymers and colloidal particles at fluid-fluid interface</i> , EU Priority FP6-2004-NMP-TI-4 STRP 033339 (CHF 200,000 in 2007-2009)
09/06 — 05/07	<i>Computer-aided design of nanostructured interfaces for biological sensors</i> CSCS P575 (8500) and XT3 (10000 cpu h/month)
12/05 — 12/08	<i>Multiscale Modeling of Nanostructured Interfaces for Biological Sensors</i> Contract NMP3-CT-2005-016375, EU-NSF (CHF 280,000 in 2006-2008)
04/02 — 10/04	<i>Smoothed Particle Dynamics</i> (DFG project HE 1100/7-1)
07/01 — 03/03	<i>Colloidal magnetic fluids</i> (DFG Priority program 1104)
06/01 — 05/03	<i>Physics of Branched Polymers</i> (Spanish Ministry of Science)
12/00 — 03/03	<i>Mesoscopically structured composite systems</i> (DFG Sfb 448)
10/98 — 09/01	Special Research Area 605 <i>Elementary friction processes</i> (DFG)
10/98 — 12/00	Project bvpt11 <i>Non-equilibrium properties of fluids</i> 800 h/a CPU time, parallel and vector machines (ZIB) Berlin
11/97 — 12/99	Project polyp <i>Computer simulation polymers</i> 14000 h/a CRAY J90+ CPU, Computing center, ETH Zürich/CH and Computing Center Manno, Grenoble/CH
08/94 — 03/97	Project (visphys) <i>Visualization of scientific data</i> Interregional BRTB testbed (DFN, BMFT)
01/94 — 12/97	Project (hbu061) <i>Rheology and structure of polymer melts, NEMD</i> 1400 h/a CPU time, CRAY T90 of the HLRZ, KFA Jülich/D GmbH
01/91 — 12/97	Project (bvpt04) <i>Non-equilibrium properties of fluids</i> 800 h/a CPU time, parallel and vector computers, Konrad-Zuse center for information technology (ZIB) Berlin

SCIENTIFIC BOARDS, EDITORIAL DUTIES (CURRENT):

08/18 – present	Advisory Board: Sci
04/18 – present	Review Editor in Soft Matter Physics: <i>Frontier in Physics</i>
12/17 – present	Associate Editor: <i>Polymers</i>
08/15 – present	Section Editor Computational Physics: <i>Open Physics</i>
08/14 — 12/17	Editorial Board: <i>Journal of Applied Chemical Science International</i>
08/13 – present	Editorial Board: <i>Journal of Nanofluids</i>
08/13 – present	Editorial Board: <i>Advances in Research</i>
02/13 — 12/17	Editorial Board: <i>Int. Research Journal of Pure and Applied Chemistry</i>
01/11 — 05/18	NANO-ET - Scientific Computing Laboratory Belgrade, Serbia
02/10 – present	Editorial Board: <i>Journal of Non-Newtonian Fluid Mechanics</i>
10/09 — 11/17	Editorial Board: <i>Polymers</i>
04/07 – present	Editorial Board: <i>Physics Research International</i>
12/06 – present	Full Member of Materials Research Center, ETH Zürich
09/05 – present	Vice-President of ETH-spinoff association <i>Applied Rheology</i>
01/99 – present	Editor-in-Chief: <i>Applied Rheology</i>
01/97 – present	Referee for Natl. Sci. Foundations and more than 50 journals (cf. publons)

LANGUAGES:

German, English, Latin, French

CONFERENCE ORGANIZING COMMITTEES/SCIENTIFIC BOARDS (SELECTION):

03/17	IWNET 2018, Sint-Michielsgestel/NL
08/15	IPAC-2018, Toronot/CAN
06/14	IWNET 2015 & IWNET 2018, Groenendael/NL
07/14	9th Liquid Matter Conference, Lisbon/POR
08/12	IWNET 2012, Roros/NOR
02/10	Swiss Soft Days, Zurich/CH
08/09	5th International Workshop on Nonequilibrium Thermodynamics IWNET 2009, Mexico
07/08	8th World Congress on comput. mechanics WCCM8 2008, Venice/I
07/07	IDEA League Multi-scale modelling 2007, Aachen/D
06/07	XVth Int. Workshop on num. methods non-newt. flows 2007, Rhodes/GR
08/06	Int. Workshop on nonequilibrium thermodyn. & complex fluids 2006, Rhodes/GR
07/05	CECAM workshop on entangled polymeric liquids, Lyon/F
03/03	Spring meeting of the German Physical Society, Dresden/D
02/03	CECAM workshop on mesoscopic modelling of polymer dynamics, Lyon/F
07/02	4th German ferrofluid workshop, Berlin/D

PATENT:

12/06	<i>Design method and system for polymer material</i> with Hiromichi Yanagihara, Toyota Motor Corporation Patent JP2006338449 int. classification G06F17/50
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SOCIETIES:

04/06 – present	Biophysical Society
03/97 – present	German/American/European Physical Societies
03/97 – present	German/American/Swiss Societies of Rheology
03/05 – present	World Scientific & Engineering Academy and Society

INVITED TALKS:

A complete list of (ca. 100) invited talks and (further 150) conference contributions is available at <http://www.complexfluids.ethz.ch>

UNIVERSITY LECTURE COURSES (LECTURES INCL. EXERCISES):

1995	Computer simulations in statistical physics, Univ. Metz/F
1996	Monte-Carlo in physics: Methods and applications, Univ. Strasbourg/F
1996	Computer simulations in theoretical physics, Univ. Metz/F
1996	Fokker-Planck equations and molecular dynamics, Univ. Strasbourg/F
1996/97	Computer simulation in statistical physics, TU Berlin (TUB)
1998	Introduction to computer simulation methods, ECPM Strasbourg/F
1998	Theoretical Physics IIIa (quantum mechanics/thermodynamics), TUB
1998/1999	Statistical Physics II (Computer simulation in statistical physics), TUB
1999	Theoretical Physics Ia (Point and continuum mechanics, special relativity), TUB
1999	Theoretical Physics III (Elektrodynamics/optics), TUB
1999/2000	Statistical Physics II (Physics of anisotropic fluids, quantum thermodynamics), TUB
2000	Theoretical Physics IV (Thermodynamics and statistics), TUB
2000/2001	Statistical Physics II (Anisotropic fluids, plasticity, liquid crystals), TUB
2001/2002	Theoretical Physics IIa (Mechanics, electrodynamics, quantum mechanics), TUB
2002	Statistical Physics II, TUB
2002/2003	Statistical Physics I, TUB
2003/2004	Computerpraktikum (Materials Department) ETH Zurich (ETHZ)
2004/2005	Multiscale Simulation and Computation (with Prof. P. Koumoutsakos), ETHZ
2005	Computational Physics in Materials Science, ETHZ
2005/2006	Computer Laboratory, ETHZ
2006/2007	Multiscale Modeling and Computation, ETHZ
2006-2009	Introduction to Computational Physics (with Prof. H. Herrmann), ETHZ
2007-2010	Computational Polymer Physics, ETHZ
2007-2010	Multiscale Modeling and Computation, ETHZ
2010– present	Polymers I, Polymer Physics, ETHZ

PHD SUPERVISION (PAST FEW YEARS):

2003-2009	Yi Ding, Multiscale modeling of dendronized polymers
2006-2009	Qiang Zhu, Dynamics of entanglement networks
2005-2009	Matteo Colangeli, Boltzmann equation and coarse-graining
2008	Bechir Mokdad, Reduced modeling of Fokker-Planck equations
2008-2012	Orit Peleg, Simple dynamic models of competitive interactions in biophysical networks
2008-2012	Monirosadat Sadati, Cross-slot channel & regularization of scattered velocimetry data
2014-2014	Ester Cordova Mateo, Structure and properties of polymeric systems
2015-2015	Shiwani Singh, Lattice Fokker Planck for complex fluids
2013-2016	Manjesh Singh, Simulation and experimental studies of polymer-brushes under shear
2016-2018	Ahmad Mokhimi Kheirabadi, Multiscale modeling of polymer interfaces
2018 – present	Aikaterini Galata, Polymers at surfaces

2019

Gregor Hofer, 2D Polymers

CURRENT COLLABORATORS:

Juan J. de Pablo	Univ. Madison, Wisconsin, USA
Manolo Laso	UPM, Madrid, Spain
Robert S. Hoy	UC Santa Barbara, USA
Nikos Karayiannis	UPM, Madrid, Spain
Ying Li, W.K. Liu	NWU, Chicago, USA
Igal Szleifer	NWU, Chicago, USA
Anna Balazs	Univ. Pittsburg, Pennsylvania, USA
Ekaterina B. Zhulina	St. Petersburg, Russia
Andreas Bausch	TU Munich, Germany

September 2, 2019

Martin Kröger

Average citations per article: 28/37 (Clarivate/Google scholar)

h-index: 43/51 (Clarivate/Google scholar)

google scholar ID: EUCO-BAAAAAJ

scopus ID: 56416643300

ORCID: 0000-0003-1402-6714

(as of 2 Sep 2019)

Publications

peer-reviewed contributions only

1. M. Kröger and S. Hess:
Viscoelasticity of polymeric melts and concentrated solutions. The effect of flow-induced alignment of chain ends.
Physica A **195** (1993) 336-353
2. M. Kröger, W. Loose and S. Hess:
Structural changes and rheology of polymer melts via nonequilibrium molecular dynamics.
J. Rheol. **37** (1993) 1057-1080
3. M. Kröger:
Flow-alignment and rheology of polymer melts. Computation of the single-link orientational distribution function.
Makromol. Chem. **81** (1994) 83-90
4. M. Kröger and H. Voigt:
On a quantity describing the degree of entanglement in linear polymer systems.
Macromol. Theory Simul. **3** (1994) 639-647
5. S. Kröger and M. Kröger:
A program to compute the angular coefficients of the relativistic one-electron hyperfine structure parameters.
Comput. Phys. Commun. **90** (1995) 381-387
6. M. Kröger and H.S. Sellers:
Viscosity coefficients for anisotropic, nematic fluids based on structural theories of suspensions.
J. Chem. Phys. **103** (1995) 807-817
7. M. Kröger:
NEMD computer simulation of polymer melt rheology.
Rheol. **5** (1995) 66-71
8. M. Kröger and B. Kröger:
A novel algorithm to optimize classification trees.
Comput. Phys. Commun. **95** (1996) 58-72
9. C. Schneggenburger, M. Kröger and S. Hess:
An extended FENE dumbbell theory for concentration dependent shear-induced anisotropy in dilute polymer solutions.
J. Non-Newtonian Fluid Mech. **62** (1996) 235-251
10. W. Carl and M. Kröger:
Flow-induced Shape of Linear Micelles.
Phys. Rev. E **15** (1996) 164-169
11. F. Affouard, M. Kröger and S. Hess:
Molecular dynamics of model liquid crystals composed of semiflexible molecules.
Phys. Rev. E **54** (1996) 5178-5186

12. M. Kröger:
Optimization of classification trees: strategy and algorithm improvement.
Comput. Phys. Commun. **99** (1996) 81-93
13. M. Kröger and T.C.B. McLeish:
Rheology/Chain Structure Relationships in Polymers.
Appl. Rheol. **6** (1996) 133-136
14. M. Kröger and R. Makhloufi:
Wormlike micelles under shear flow: a microscopic model studied by nonequilibrium molecular dynamics computer simulations.
Phys. Rev. E **53** (1996) 2531-2536
15. R. Makhloufi and M. Kröger:
Rheology and structure of complex fluids.
Appl. Rheol. **6** (1996) 278-280
16. M. Kröger:
Microscopic models of complex fluids in nonequilibrium.
in *Fluid Mechanics and its Application*
(Kluwer Acad. publ., Dordrecht, 1996) 210-217
17. M. Kröger, C. Luap and R. Muller:
Polymer melts under uniaxial elongational flow : stress-optical behavior from experiments and NEMD computer simulations.
Macromolecules **30** (1997) 526-539
18. M. Kröger and H.S. Sellers:
On the signs of the Leslie viscosities α_2 and α_3 for nematics and discotic nematics.
Mol. Cryst. Liq. Cryst. **293** (1997) 17-28
19. W. Carl, R. Makhloufi and M. Kröger:
On the Shape and Rheology of Linear Micelles in Dilute Solutions.
J. Phys. France II **7** (1997) 931-946
20. M. Kröger and H.S. Sellers:
Viscosities of Nematic and Discotic Nematic Liquid Crystals according to the Affine Transformation Model.
Mol. Cryst. Liq. Cryst. **300** (1997) 245-262
21. S. Hess, M. Kröger and W.G. Hoover:
Shear modulus of fluids and solids.
Physica A **239** (1997) 449-466
22. S. Kröger and M. Kröger:
A program to compute the angular coefficients of the relativistic one-electron hyperfine structure parameters.
Comput. Phys. Commun. **103** (1997) 97-99
23. S. Hess, C. Aust, L. Bennett, M. Kröger, C. Pereira Borgmeyer, and T. Weider:
Rheology: From simple and to complex fluids.
Physica A **240** (1997) 126-144
24. M. Kröger and H.S. Sellers:
Fokker-Planck calculations for viscosities of biaxial fluids
Phys. Rev. E **56** (1997) 1804-1807
25. M. Kröger:
Flow-induced alignment of rodlike and flexible polymers in the molten state
Physica A **249** (1998) 332-336

26. S. Hess, M. Kröger and H. Voigt:
Thermo-mechanical properties of the WCA-Lennard-Jones model system in its fluid and solid states
Physica A **250** (1998) 58-82
27. M. Kröger:
Nonequilibrium molecular simulations of simple and complex fluids
Curr. Opin. Coll. & Interf. Sci. **3/6** (1998) 614-619
28. M. Kröger:
Micro/mesoscopic approaches to the ring formation in linear wormlike micellar systems
Macromol. Chem. Macromol. Symp. **133** (1998) 101-112
29. T.C.B. McLeish and M. Kröger:
Dynamics of complex fluids
Bull. British Soc. Rheol. (1998) 18-22
30. J. Vermant, A.B.D. Brown and M. Kröger:
Time resolved evolution of soft condensed matter under flow
Appl. Rheol. **9** (1999) 34-39
31. M. Kröger:
Efficient hybrid algorithm for the dynamic creation of semiflexible polymer solutions, brushes, melts and glasses
Comput. Phys. Commun. **118** (1999) 278-298
32. M. Kröger, P.L. Luisi, H.C. Öttinger, P. Smith and U.W. Suter:
Vom Pikometer zum Megameter
ETH Bull. **274** (1999) 16-19
33. A. Chrzanowska, M. Kröger and H.S. Sellers:
Mesosopic theory for the viscosities of nematic liquid crystals
Phys. Rev. E **60** (1999) 4226-4234
34. C. Aust, M. Kröger and S. Hess:
Structure and dynamics of dilute polymer solutions under shear flow via nonequilibrium molecular dynamics
Macromolecules **32** (1999) 5660-5672
35. M. Kröger and S. Hess:
Solid friction studied via non-equilibrium molecular dynamics computer simulations
Z. angew. Math. Mech. **80** (2000) S49-S52
36. M. Kröger and S. Hess:
Rheological evidence for a dynamical crossover in polymer melts via nonequilibrium molecular dynamics
Phys. Rev. Lett. **85** (2000) 1128-1131
37. S. Hess and M. Kröger:
Pressure of fluids and solids composed of particles interacting with a short range repulsive potential
Phys. Rev. E **61** (2000) 4629-4631
38. J. Fang, M. Kröger and H.C. Öttinger:
A thermodynamically admissible reptation model for fast flows of entangled polymers. II. Model predictions for shear and extensional flows
J. Rheol. **44** (2000) 1293-1317
39. M. Kröger, A. Alba, M. Laso and H.C. Öttinger:
Variance reduced Brownian simulation of a bead-spring chain under steady shear flow considering hydrodynamic interaction effects
J. Chem Phys. **113** (2000) 4767-4782

40. W. Muschik, S. Gümbel, M. Kröger and H.C. Öttinger:
A simple example for comparing GENERIC with rational non-equilibrium thermodynamics
Physica A **285** (2000) 448-466
41. M. Kröger:
Rheology and structure of complex fluids (review)
Appl. Rheol. **10** (2000) 110-111
42. M. Kröger, M. Hütter and H.C. Öttinger:
Symbolic test of the Jacobi identity for given generalized 'Poisson' bracket
Comput. Phys. Commun. **137** (2001) 325-340
43. M. Hütter, M. Kröger, H.C. Öttinger, and T. Schweizer:
Bridging scales in polymer physics and processing
Chimia **55** (2001) 178-182
44. S. Hess and M. Kröger:
Thermophysical properties of gases, liquids and solids composed of particles interacting with a short range attractive potential
Phys. Rev. E **64** (2001) 011201-011211
45. S. Hess, T. Weider, and M. Kröger:
Viscous properties and structure of ferro-fluids and magneto-rheological fluids.
Magnetohydrodyn. **37** (2001) 297-306
46. P. Ilg, M. Kröger, and S. Hess:
Magnetoviscosity and orientational order parameters of dilute ferrofluids
J. Chem. Phys. **116** (2002) 9078-9088.
47. I. Stankovic, M. Kröger, and S. Hess:
Recognition and analysis of local structure in polycrystalline configurations
Comput. Phys. Commun. **145** (2002) 371-384.
48. G. Rienäcker, M. Kröger, and S. Hess:
Chaotic orientational behavior of a nematic liquid crystal subjected to a shear flow
Phys. Rev. E **66** (2002) 040702 (4 pages).
49. P. Ilg and M. Kröger:
Magnetization dynamics, rheology, and an effective description of ferromagnetic units in dilute suspension
Phys. Rev. E **66** (2002) 021501 (16 pages)
50. M. Kröger, J. Ramirez, and H.C. Öttinger:
Projection from an atomistic chain contour to its primitive path
Polymer **43** (2002) 477-487
51. M. Kröger:
Metal foams via embedded atoms simulation
Comp. Model. Eng. Sci. (suppl) **3** (2002) 32-36.
52. M. Ellero, M. Kröger and S. Hess:
Viscoelastic flows studied by smoothed particle hydrodynamics
J. Non-Newtonian Fluid Mech. **105** (2002) 35-51
53. M. Kröger:
Fluid dynamics: theory, computation, and numerical simulation
Appl. Rheol. **12** (2002) 317-320
54. S. Hess and M. Kröger:
Elastic and plastic behavior of model solids – molecular dynamics computer simulations
Techn. Mech. **22** (2002) 79-88

55. C. Aust, S. Hess, and M. Kröger:
Rotation and deformation of a polymer molecule in a steady shear flow
Macromolecules **35** (2002) 8621-8630
56. G. Rienäcker, M. Kröger, and S. Hess:
Chaotic and regular shear-induced orientational dynamics of nematic liquid crystals
Physica A **315** (2002) 537-568.
57. P. Ilg, I.V. Karlin, M. Kröger, and H.C. Öttinger:
Canonical distribution functions in polymer dynamics: II. Liquid-crystalline polymers
Physica A **319** (2003) 134-150.
58. M. Kröger, I. Stankovic, and S. Hess:
Towards multiscale modeling of metals via embedded particle computer simulation
Multiscale modeling and simulation **1** (2003) 25-39.
59. M. Kröger, P. Ilg, and S. Hess:
Magnetoviscous model fluids
J. Phys. Condens. Matter **15** (2003) S1403-S1423.
60. P. Ilg, M. Kröger, and S. Hess:
Magnetization dynamics from kinetic theory of ferromagnetic units in dilute suspension
Magnetohydrodynamics **39** (2003) 41-48.
61. V.A. Harmandaris, V.G. Mavrantzas, D.N. Theodorou, M. Kröger, and H.C. Öttinger:
Crossover from the Rouse to the entangled polymer melt regime: Signals from long, detailed atomistic Monte Carlo dynamics simulations, supported by rheological experiments
Macromolecules **36** (2003) 1376-1387.
62. S. Hess, M. Kröger, and D.J. Evans:
Crossover between short- and long-time behavior of stress fluctuations and viscoelasticity of liquids
Phys. Rev. E **67** (2003) 042201.
63. M. Kröger, M. Müller, and J. Nievergelt:
A geometric embedding algorithm for efficiently generating semiflexible chains in the molten state
CMES - Comput. Model. Eng. Sci. **4** (2003) 559-570.
64. P. Ilg, M. Kröger, S. Hess, and Y. Zubarev:
Dynamics of colloidal suspensions of ferromagnetic particles in plane Couette flow: comparison of approximate solutions
Phys. Rev. E **67** (2003) 061401.
65. P. Ilg and M. Kröger:
Magnetization dynamics, rheology, and an effective description of ferromagnetic units in dilute suspension
Phys. Rev. E **67** (2003) 049901.
66. T. Erdmann, M. Kröger, and S. Hess:
Phase behavior and structure of Janus fluids
Phys. Rev. E **67** (2003) 041209.
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