

List of publications by PD Dr. Arnulf Möbius

This list includes all publications in journals, proceedings of international conferences, patents, as well as diploma thesis, dissertation, and habilitation.

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1. “Behandlung von Präcompoundprozessen mittels Projektionsoperatorenformalismus”,
A. Möbius and B. Weißbach,
Proceedings V International Seminar Interaction of Fast Neutrons with Nuclei, Gaußig,
1974,
Wissenschaftliche Zeitschrift der Technischen Universität Dresden **24** (1975) 1357–
1360;
2. “Berechnung von Korrelationsfunktionen für die elastische Nukleonenstreuung an
spinlosen Kernen unter Berücksichtigung von Polarisierungseffekten”,
A. Möbius,
diploma thesis at Sektion Physik, Technischen Universität Dresden, 1975;
3. “Statistical theory of electron transport in open electron-phonon systems”,
A. Möbius and G. Vojta,
Physica **94A** (1978) 321–338;
4. “D.c. electrical resistivity as a functional of generalized dynamical susceptibilities —
comparison of different methods”,
A. Möbius, F. Goedsche, and G. Vojta,
Physica **95A** (1979) 294–310;
5. “Deviations from Matthiessen’s rule in the low-temperature resistivity of iron”,
A. Möbius, F. Goedsche, D. Elefant, K.-H. Berthel, and G. Vojta,
physica status solidi (b) **95** (1979) 203–214;
6. “On the low-temperature resistivity of ferromagnetic transition metal alloys”,
F. Goedsche, A. Möbius, and A. Richter,
physica status solidi (b) **96** (1979) 279–286;
7. “Beiträge zur statistischen Theorie des elektrischen Widerstandes von Festkörpern”,
A. Möbius,
dissertation at Akademie der Wissenschaften der DDR, 1980;
8. “Theory of electron transport in coupled solid state systems”,
G. Vojta, A. Möbius, and F. Goedsche,
Proceedings 5th International Symposium High Purity Materials in Science and
Technology, Dresden, 1980, ZFW Dresden, part I, p. 66–90;

9. “Electron transport in disordered and partially ordered magnetic solids”,
F. Goedsche, R. Richter, A. Möbius, and G. Vojta,
Proceedings 5th International Symposium High Purity Materials in Science and
Technology, Dresden, 1980, ZFW Dresden, part III, P. 82–104;
10. “Numerical treatment of quenching processes in superconducting magnet systems”,
D. Eckert, A. Gladun, A. Möbius, and P. Verges,
Cryogenics **21** (1981) 367–371;
11. “A V₃Ga-NbTi magnet system with different currents from one power supply”,
D. Eckert, K. Fischer, C. Frenzel, A. Gladun, W. Holzhäuser, M. Knorn, F. Lange,
A. Möbius, and P. Verges,
Proceedings Seventh International Conference on Magnet Technology, Karlsruhe, 1981,
IEEE Transactions on Magnetics **Mag-17** (1981) 1632–1634;
12. “A computer program simulating the quench of superconducting magnet systems”,
D. Eckert, F. Lange, and A. Möbius,
Proceedings Seventh International Conference on Magnet Technology, Karlsruhe, 1981,
IEEE Transactions on Magnetics **Mag-17** (1981) 1807–1810;
13. “Effektive Realisierung numerischer Integrationsverfahren für steife Probleme”,
E. Griepentrog and A. Möbius,
Proceedings Third Conference on Numerical Treatment of Ordinary Differential
Equations, Berlin, 1982, editor: R. März,
Seminarbericht Nr. 46 (1982), Humboldt-Universität zu Berlin, Sektion Mathematik,
p. 75–80;
14. “The metal-semiconductor transition in amorphous Si_{1-x}Cr_x films — scaling behaviour
and minimum metallic conductivity”,
A. Möbius, D. Elefant, A. Heinrich, R. Müller, J. Schumann, H. Vinzelberg, and G. Zies,
Journal Physics C: Solid State Physics **16** (1983) 6491–6498;
15. “The metal-semiconductor transition in amorphous Si_{1-x}Cr_x films — scaling behaviour
and minimum metallic conductivity”,
A. Möbius, D. Elefant, A. Heinrich, R. Müller, J. Schumann, H. Vinzelberg, and G. Zies,
Proceedings 13th Annual International Symposium on Electronic Structure of Metals and
Alloys, Johnsbach, 1983, editor: P. Ziesche, Technische Universität Dresden,
p. 219–224;
16. “The metal-semiconductor transition in disordered 3d systems — an attempt of a unified
phenomenological description”,
A. Möbius, H. Vinzelberg, D. Elefant, C. Gladun, J. Schumann, G. Zies, F. Goedsche,
and A. Heinrich,
Proceedings International Seminar on Localization in Disordered Systems, Johnsbach,
1983, editors: W. Weller and P. Ziesche, Teubner: Leipzig, 1984, p. 32–46;

17. “Vlijanije Fermi-shidkostnogo wsaimodeistvija na fasowy perechod $2\frac{1}{2}$ -go roda”,
M.I. Kaganow and A. Möbius,
Shurnal Eksperimentalnoi i Teoretitscheskoi Fisiki **86** (1984) 691–700,
translation: “Effect of Fermi-liquid interaction on a phase transition of order $2\frac{1}{2}$ ” in
Soviet Physics JETP **59** (1984) 405–409;
18. “The metal-semiconductor transition in three-dimensional disordered systems —
reanalysis of recent experiments pro and con the minimum metallic conductivity”,
A. Möbius,
Proceedings 14th Annual International Symposium on Electronic Structure of Metals and
Alloys, Gaußig, 1984, editor: P. Ziesche, Technische Universität Dresden, p. 127–133;
19. “Perechod metall-poluprowodnik w amorfnykh pljonkach $\text{Si}_{1-x}\text{Cr}_x$ ”,
A. Möbius, H. Vinzelberg, D. Elefant, C. Gladun, A. Heinrich, R. Müller, J. Schumann,
and G. Zies,
Proceedings 23-je Wsesojusnoje sowestschanije po fisike niskich temperatur, Tallin,
1984, Institut chimitscheskoi i biologitscheskoi fisiki AN ESSR, II, p. 10–11;
20. “Obobstschenny topologitscheski perechod w normalnykh metallach”,
M.I. Kaganow, A. Möbius, and A.A. Nurmagambetow,
Proceedings 23-je Wsesojusnoje sowestschanije po fisike niskich temperatur, Tallin,
1984, Institut chimitscheskoi i biologitscheskoi fisiki AN ESSR, II, p. 174–175;
21. “Effective realization of numerical integration method for stiff problems”,
E. Griepentrog and A. Möbius,
Zeitschrift für angewandte Mathematik und Mechanik **65** (1985) 561–567;
22. “The metal-semiconductor transition in amorphous $\text{Si}_{1-x}\text{Cr}_x$ films: II. Range of validity of
the scaling behaviour of the conductivity, $\sigma(T,x) = \sigma(T/T_0(x))$, in the semiconducting
region and determination of the minimum metallic conductivity from $\sigma(T,x)$ in the
metallic region”,
A. Möbius, H. Vinzelberg, C. Gladun, A. Heinrich, J. Schumann, and G. Zies,
Journal Physics C: Solid State Physics **18** (1985) 3337–3355;
23. “The metal-semiconductor transition in three-dimensional disordered systems —
reanalysis of recent experiments for and against minimum metallic conductivity”,
A. Möbius,
Journal Physics C: Solid State Physics **18** (1985) 4639–4670;
24. “Widerstandsschicht für den Mittel- und Hochohmereich”,
H. Vinzelberg, J. Schumann, A. Heinrich, G. Zies, and A. Möbius,
patent specification DD 230 105 A1 (1985);
25. “Density of states within the Coulomb gap”,
A. Möbius, F. Goedsche, M. Richter, and F. Bialas,
Proceedings 15th Annual International Symposium on Electronic Structure of Metals and
Alloys, Johnsbad, 1985, editor: P. Ziesche, Technische Universität Dresden,
p. 198–204;

26. “Perechod metall-poluprowodnik w trjochmernih neuporjadotschennyh sistemach — nowy analis eksperimentalnyh dannyh (sustschestwujet li minimalnaja metallitscheskaja prowodimost?)”,
A. Möbius,
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27. “Contradiction between the scaling theory of localisation and experiment”,
A. Möbius,
Journal Physics C: Solid State Physics **19** (1986) L147–L150;
28. “Coulomb gap in 1-D systems”,
A. Möbius and M. Richter,
Proceedings 16th Annual International Symposium on Electronic Structure of Metals and Alloys, Johnsbach, 1986, editor: P. Ziesche, Technische Universität Dresden,
p. 172–177;
29. “Density of states within the Coulomb gap”,
A. Möbius and M. Richter,
Proceedings International Seminar on Localization in Disordered Systems,
Bad Schandau-Ostrau, 1986, editors: W. Weller and P. Ziesche, Teubner: Leipzig, 1987,
p. 167–172;
30. “The Coulomb gap in 1D systems”,
A. Möbius and M. Richter,
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31. “The metal-semiconductor transition in amorphous $\text{Si}_{1-x}\text{Cr}_x$ films: Detection of the transition by room-temperature measurements”,
A. Möbius,
physica status solidi (b) **144** (1987) 759–766;
32. “The metal-semiconductor transition in three-dimensional disordered systems — reanalysis of recent experiments for and against minimum metallic conductivity”,
A. Möbius,
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33. “Density of states within the Coulomb gap”,
A. Möbius and M. Richter,
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Journal of Non-Crystalline Solids **97&98** (1987) 483–486;

34. “Detection of the metal-semiconductor transition in amorphous $\text{Si}_{1-x}\text{Cr}_x$ films by room-temperature measurements?”,
A. Möbius,
Proceedings 7th General Conference of the CMD-EPS, Pisa, 1987,
Physica Scripta **38** (1988) 221–223;
35. “The metal-semiconductor transition in amorphous $\text{Si}_{1-x}\text{Cr}_x$ films: Separation of temperature dependent conductivity contributions in the metallic region”,
A. Möbius,
Proceedings 18th Annual International Symposium on Electronic Structure of Metals and Alloys, Gaußig, 1988, editor: P. Ziesche, Technische Universität Dresden, p. 238–239;
36. “Widerstandsthermometer, vorzugsweise für tiefe Temperaturen”,
A. Möbius,
patent specification DD 257 490 A1 (1988);
37. “Comment on variable-range hopping in InP close to the metal-insulator transition”,
A. Möbius,
Journal of Physics C: Solid State Physics **21** (1988) 2789–2793;
38. “Comment on ‘Critical behavior of the zero-temperature conductivity in compensated silicon, $\text{Si}:(\text{P},\text{B})$ ’ ”,
A. Möbius,
Physical Review B **40** (1989) 4194–4195;
39. “Restricted branch-and-bound algorithm for combinatorial optimization: Travelling salesman revisited”,
A. Möbius and M. Richter,
in “Evolution and Optimization '89. Selected Papers on Evolution Theory, Combinatorial Optimization, and Related Topics”, editors: H.-M. Voigt, H. Mühlenbein, and H.-P. Schwefel, Akademie-Verlag: Berlin, 1990, p. 199–207;
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A. Möbius and M. Richter,
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A. Möbius,
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A. Möbius,
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44. “Coulomb gap in two- and three-dimensional systems: simulation results for large samples”,
A. Möbius, M. Richter, and B. Drittler,
Physical Review B **45** (1992) 11568–11579;
45. “Tradition und Neuanfang”,
J. Besold and A. Möbius,
Physikalische Blätter **49** (1993) 40–41;
46. “Various methods for determining the critical metallic volume fraction φ_c at the metal-insulator transition”,
R.L. Rosenbaum, M. Slutzky, D.S. McLachlan, and A. Möbius,
Proceedings 5th International Conference on Hopping and Related Phenomena, Glasgow, 1993, editors: C.J. Adkins, A.R. Long, and J.A. McInnes, World Scientific: Singapore, 1994, p. 261–265;
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R.L. Rosenbaum, M. Slutzky, A. Möbius, and D.S. McLachlan,
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A. Möbius and M. Pollak,
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49. “Low temperature specific heat of the Coulomb glass: Role of correlations”,
A. Möbius and M. Pollak,
Physical Review B **53** (1996) 16197–16200;
50. “Hybrid algorithm for low T — Specific heat of the Coulomb glass”,
A. Möbius and P. Thomas,
Proceedings 21st International Conference on Low Temperature Physics, Prag, 1996, editors: S. Daniš, V. Gregor and K. Záveta,
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51. “Surface and bulk properties of electron beam evaporated carbon films”,
J. Besold, R. Thielsch, N. Matz, C. Frenzel, R. Born, and A. Möbius,
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52. “Hybrid algorithm for Metropolis simulations at low temperatures — Specific heat of the Coulomb glass”,
A. Möbius and P. Thomas,
Physical Review B **55** (1997) 7460–7463;
53. “Coulomb glass simulations: Creation of a set of low-energy many-particle states, non-ergodic effects in the specific heat”,
A. Díaz-Sánchez, A. Möbius, M. Ortuño, A. Pérez-Garrido, and M. Schreiber,
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Proceedings 7th International Conference on Hopping and Related Phenomena, Ráckeve,
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physica status solidi (b) **205** (1998) 45–51;
55. “Optimization by thermal cycling”,
A. Möbius, A. Neklioudov, A. Díaz-Sánchez, K.H. Hoffmann, A. Fachat, and
M. Schreiber,
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57. “The metal-insulator transition in amorphous $\text{Si}_{1-x}\text{Ni}_x$: So, was Mott right after all?”,
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and iterative partial transcription”,
A. Möbius, A. Díaz-Sánchez, B. Freisleben, M. Schreiber, A. Fachat, K.H. Hoffmann,
P. Merz, and A. Neklioudov,
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A. Möbius, C. Frenzel, R. Thielsch, R. Rosenbaum, C.J. Adkins, M. Schreiber, H.-D. Bauer, R. Grötzschel, V. Hoffmann, T. Krieg, N. Matz, H. Vinzelberg, and M. Witcomb,
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A. Möbius and C.J. Adkins,
Current Opinion in Solid State & Materials Science **4** (1999) 303–314,
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63. “Metal-insulator transition in amorphous alloys”,
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66. “Specific heat of the Coulomb glass”,
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67. “Possible persistence of the metal-insulator transition in two-dimensional systems at finite temperatures”,
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68. “Phase transition of a Coulomb system on a lattice”,
A. Möbius and U.K. Rößler,
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69. “Short-range type critical behavior in spite of long-range interactions: the phase transition of a Coulomb system on a lattice”,
A. Möbius and U.K. Rößler,
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70. “Optimization by thermal cycling”,
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“Complexity, Metastability and Nonextensivity”, Erice, 20.–26.7.2004, editors:
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London, Singapore, Beijing, Shanghai, Hong Kong, Taipei, Chennai, 2005), p. 215 –
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71. “Lifshitz transitions and elastic properties of osmium under pressure”,
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73. “Coulomb gap revisited – a renormalization approach”,
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76. “Indications for a line of continuous phase transitions at finite temperatures connected with the apparent metal-insulator transition in 2d disordered systems”,
A. Möbius,
Physica E **42**, 1243 –1246 (2010),
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