

## New Publications

### 2023

W. Ebeling, H. Krienke, **Statistical theory of individual activity coefficients of electrolytes including multiple ionic charges**, Condensed Matter Physics Vol. 26, No. 2, 23602 (2023), <https://DOI: 10.5488/CMP.26.23602>

W. Ebeling, R. Feistel, E.-C. Haß, P. Plath (2013), **Zu Problemen der mechanisch – chemisch – elektrischen Energiewandlung und des Transports hochwertiger Energie im Kontext des Klimawandels**, Leibniz Online, Nr. 50, 1 – 26 (2023), [https:// doi: 10.53201/LEIBNIZONLINE50](https://doi: 10.53201/LEIBNIZONLINE50)

W. Ebeling, G. Röpke, **Hydrogen-, Helium-, and Lithium-like Bound States in Classical and Quantum Plasmas**, Plasma, **6**, 1–26 (2023), <https://doi.org/10.3390/plasma6010001>

W. Ebeling, **Naturgesetze sind nicht verhandelbar. Wie kann man den Klimawandel effektiv bekämpfen**, Berliner Zeitung, Dienstag, 23. Mai 2023

W. Ebeling M. Holovko, W. Kunz, I. Yukhnovskii, **Obituary: In memory of Hartmut Krienke**, Condensed Matter Physics, **26**, No. 4, 47002: 1–3 (2023)

### 2022

V. Anishchenko, W. Ebeling, E.-C. Hass, P. Plath, L. Schimansky-Geier, G. Stelkova, **Modeling battery systems – problems of nonlinearity, efficiency, aging, coupling, and network setup**, Izv. Saratov Univ. Nov. Ser: Fizika 22 (2022) 4

W. Ebeling, L.-G. Fleischer, **Zur Verantwortung von Natur- und Technikwissenschaftlern und zum Klimaproblem**  
Leibniz Online, Nr. 46 (2022), Zeitschrift der Leibniz-Sozietät d. Wiss. zu Berlin, ISSN 1863-3285

W. Ebeling, S. Trigger, **Development of the Pandemic COVID-19**. An Evolutionary View, Sitzungsberichte Leibniz-Sozietät der Wissenschaften, Band **152** (2022) 121-135

### 2021

W. Ebeling, R. Feistel, H. Krienke, **Statistical theory of individual ionic activity coefficients of electrolytes with multiple – charged ions including seawater**, Journal of Molecular Liquids, **346**, 15 January 2022, 117814, online 21 Oct 2021; DOI: [10.1016/j.molliq.2021.117814](https://doi.org/10.1016/j.molliq.2021.117814)

W. Ebeling, H. Reinholz, G. Röpke, **Equation of state of hydrogen, helium, and solar plasmas**, Contributions Plasma Physics, online 15 Aug 2021  
DOI: [10.1002/ctpp.202100085](https://doi.org/10.1002/ctpp.202100085)

W. Ebeling, **Seawater Plasma as the most Abundant Classical Plasma on Earth -Studies on Individual Activities and Pressures**, Contribution to PNP 20, Moscow, December 2020, Preprint Research Gate January 2021

## 2020

W. Ebeling, R. Feistel, F. Camoes, **On statistical calculations of individual ionic activity coefficients**, Trends in Physical Chemistry, **20**, 1 - 26 (2020)

W. Ebeling, T. Pöschel, **Lekzii po kvantovoi statistike** (Übers. a.d. Deutschen) 339 Seiten, R&C Dynamics, Moskva – Ishevsk 2020, ISBN 978 – 5 -4344 – 0898 - 1

V. E. Fortov, V.S. Filinov, A.S. Larkin, W. Ebeling, **Statisticheskaya Fisika**, 671 Seiten, FizMatGiz Moskva 2020, ISBN 978-5-9221-1885-9

W. Ebeling, H. Reinholz, G. Röopke, **Hydrogen, helium and lithium plasmas at high pressures**, Eur. Phys. J. Special Topics **229**, 3403–3431 (2020), <https://doi.org/10.1140/epjst/e2020-000066-6>

W. Ebeling, R. Feistel, M. Grigo, **Statistical calculations of individual conductivities of electrolytes and seawater**. I. Basic theory, models and approximations; Research Gate 2020, DOI: 10.13140/RG.2.2.18591.20640;

W. Ebeling, **Der Marxsche „Werth“ – Begriff** und seine stimulierende und integrative Roolle in der heutigen Wissenschaft, p. 81 – 91 in: W. Girnus, A. Wessel, Lebendiges Denken: Marx als Anreger, Leipziger Universitätsverlag, Leipzig 2020

**Note that this list of papers given below up to year 2020** has been compiled by Prof. Thorsten Pöschel, FAU University of Erlangen – Nürnberg and is available at <http://www.mss.cbi.fau.de/ebeling/bibtexbrowser.php?frameset&bib=ebeling.bib>  
We erased in the present version of the list (in red) some papers which are due to a different author, a mathematician with the same name W. Ebeling. Further we give below also some papers which were missing in the list.

**Published papers which are not contained or not correctly cited in the given Erlangen - list up to 2020**

Werner Ebeling (MLS) und Rainer Feistel (MLS)

**Selbstorganisation in Natur und Gesellschaft und Strategien zur Gestaltung der Zukunft**  
Leibniz Online, Nr. 28 (2017) Zeitschrift der Leibniz-Sozietät e. V. ISSN 1863-3285

I. Hartmann-Sonntag, A. Scharnhorst, W.Ebeling, **Sensitive Networks – Modelling Self-Organization and Innovation Processes in Networks**. In: Innovation Networks, New Approaches in Modelling and Analyzing Series, edited by Andreas Pyka and Andrea Scharnhorst, 285-329. Berlin et al: Springer 2009

W. Ebeling, A. Scharnhorst, **Selbstorganisation und Mobilität von Wissenschaftlern – Modelle für die Dynamik von Problemfeldern und Wissenschaftsgebieten**,  
Wissenschaftsforschung Jahrbuch 2008, S. 8 – 27 (2008), ISBN 978-3-86573-454-9

W.Ebeling, M.J. Jimenez – Montano, T. Pohl, **Entropy and complexity of sequences**.- In: Entropy measures, maximum entropy principle and emerging applications, ed. By Karmeshu, Springer, Berlin 2003

Yu.L. Klimontovich, W. Ebeling, **Hydrodynamic description of the motion of charged particles in weakly ionized plasmas**, JETP, Zh. Eksp. Teor. Fis. {bf 43}, 146 (1962)

2020

- [700] **On statistical calculations of individual ionic activity coefficients of electrolytes and seawater. III. Seawater models** (Ebeling, W. and Feistel, R.), *In ResearchGate, preprint*, pp. 1-48, 2020.

2019

- [699] **Discrete-breather-assisted charge transport along DNA-like molecular wires** (Chetverikov, A. P., Ebeling, W., Lakhno, V. D., and Velarde, M. G.), *In Physical Review E*, American Physical Society, volume 100, pp. 052203, 2019.
- [698] **Fehlerhaftigkeit in der Evolution und bei der Entstehung des Lebens** (Ebeling, W. and Feistel, R.), *In Sitzungsberichte der Leibniz-Sozietät der Wissenschaften zu Berlin*, volume 139/140, pp. 33-39, 2019.
- [697] **On statistical calculations of individual ionic activity coefficients of electrolytes and seawater. II. Modeling components** (Ebeling, W. and Feistel, R.), *In ResearchGate, preprint*, pp. 1-50, 2019.
- [696] **On statistical calculations of individual ionic activity coefficients of electrolytes and seawater. I. Basics** (Ebeling, W., Feistel, R., and Krienke, H.), *In ResearchGate, preprint*, pp. 1-44, 2019.
- [695] **Lectures on Quantum Statistics - With Applications to Dilute Gases and Plasmas** (Ebeling, W. and Pöschel, T.), Springer, Cham, volume 953, pp. 1-271, 2019.
- [694] **Nonlinear excitations and bound states of electrons, holes and solitons in bilayers of triangular lattices** (Chetverikov, A. P., Ebeling, W., Schöll, E., and Velarde, M. G.), *In European Physical Journal B*, volume 92, pp. 122, 2019.

2018

- [693] **Studies on Manfred Eigen's model for the self-organization of information processing** (Ebeling, W. and Feistel, R.), *In European Biophysics Journal*, volume 47, pp. 395-401, 2018.
- [692] **About Self-organization of Information and Synergetics** (Ebeling, W. and Feistel, R.), *Chapter in (Müller, S. C., Plath, P. J., Radons, G., Fuchs, A., eds.)*, Springer International Publishing, pp. 3-8, 2018.
- [691] **Entropie, Information und Emergenz** (Ebeling, W.), *In Zeitschrift der Leibniz-Sozietät*, volume 32, pp. 1-8, 2018.
- [690] **Excitation of solitons in hexagonal lattices and ways of controlling electron transport** (Chetverikov, A. P., Ebeling, W., Schöll, E., and Velarde, M.G.), *In International Journal of Dynamics and Control*, volume 6, pp. 1376-1383, 2018.
- [689] **Ionization equilibrium between electrons and holes in bilayers and adiabatic approximations** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *In Physical Sciences and Technology*, volume 5, pp. 36-45, 2018.
- [688] **LOCALIZED LUMP-SOLITON-LIKE EXCITATIONS IN TRIANGULAR MORSE LATTICES** (Chetverikov, A. P., Dmitriev, S. V., Ebeling, W., Korznikova, E. A., and Velarde, M. G.), *In Materials Physics and Mechanics*, volume 35, pp. 16-20, 2018.

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- [687] **Excitation of solitons in hexagonal lattices and ways of controlling electron transport** (Chetverikov, A. P., Ebeling, W., Schöll, E., and Velarde, M. G.), *In International Journal of Dynamics and Control*, pp. 1376-1383, 2017.
- [686] **Selbstorganisation in Natur und Gesellschaft und Strategien zur Gestaltung der Zukunft** (Ebeling, W. and Feistel, R.), *In Zeitschrift der Leibniz-Sozietät e.V.*, volume 28, pp. 1-25, 2017.
- [685] **Energy conversion in isothermal nonlinear irreversible processes – struggling for higher efficiency** (Ebeling, W. and Feistel, R.), *In European Physical Journal Special Topics*, volume 226, pp. 2015–2030, 2017.
- [684] **Physical basis of information and the relation to entropy★** (Ebeling, W.), *In European Physical Journal Special Topics*, volume 226, pp. 161–176, 2017.
- [683] **Selbstorganisation in Natur und Gesellschaft und Strategien zur Gestaltung der Zukunft** (Ebeling, W. and Feistel, R.), pp. 1-27, 2017.

- [682] **Diskussionsbemerkung zum Vortrag von Gerhard Banse** (Ebeling, W.), *In Zeitschrift der Leibniz-Sozietät*, volume 27, pp. 1-2, 2017.
- [681] **Max Planck and Albrecht Unsöld on plasma partition functions and lowering of ionization energy** (Ebeling, W.), *In Contributions to Plasma Physics*, volume 57, pp. 441-451, 2017.
- [680] **Quantum Statistics of Dense Gases and Nonideal Plasmas** (Ebeling, W., Fortov, V.E., and Filinov, V.), Springer, Cham, pp. 1-562, 2017.
- [679] **A tribute to Dietrich Kremp** (Bornath, Th., Kraeft, W.-D., Redmer, R., Röpke, G., Schlages, M., Ebeling, W., and Bonitz, M.), *In Contributions to Plasma Physics*, volume 57, pp. 434-440, 2017.

## 2016

- [678] **From solitons to discrete breathers** (Velarde, M.G. and Chetverikov, A. P. and Ebeling, W. and Dmitriev, S. V. and Lakhno, V. D.), *In The European Physical Journal B*, volume 89, pp. 233, 2016.
- [677] **Soliton assisted control of source to drain electron transport along natural channels – crystallographic axes – in two-dimensional triangular crystallattices** (Chetverikov, A. P. and Ebeling, W. and Velarde, M. G.), *In The European Physical Journal B*, volume 89, pp. 196, 2016.
- [676] **Fazylkhan Bambetov (1939-2011) Doctor of Sciences, Professor, Academician of the National Academy of Sciences of the Republic of Kazakhstan** (Ebeling, W., Fortov, V. E., Deutsch, C., Röpke, G., Tkachenko, I. M., Petrov, O., Iosilevskiy, I., Son, E., Arkhipov, Yu., Ramazanov, T., Davletov, A., and Dzhumagulova, K.), *In Contributions to Plasma Physics*, volume 56, pp. 161-162, 2016.
- [675] **On the possibility that local mechanical forcing permits directionally-controlled long-range electron transfer along DNA-like molecular wires with no need of an external electric field** (Chetverikov, A. P., Ebeling, W., Lakhno, V. D., Shigaev, A. S., and Velarde, M. G.), *In The European Physical Journal B*, volume 89, pp. 101, 2016.
- [674] **Entropy and the Self-Organization of Information and Value** (Ebeling, W.), *In entropy*, volume 18, pp. 1-14, 2016.
- [673] **The work of Baimbetov on Nonideal Plasmas and Some Recent Developments: The work of Baimbetov on Nonideal Plasmas and Some Recent Developments** (Ebeling, W.), *In Contributions to Plasma Physics*, volume 56, pp. 163-175, 2016.
- [672] **Beiträge zur Geschichte der Synergetik - Allgemeine Prinzipien der Selbstorganisation in Natur und Gesellschaft** (Ebeling, W., Fortov, V. E., and Filinov, V.), Springer, Wiesbaden, pp. 1-328, 2016.
- [671] **Collisions of quasi-one-dimensional solitons in triangular Morse lattice** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *In Letters on Materials*, Letters on Materials, volume 6, pp. 82-85, 2016.
- [670] **Long-Range Electron Transport Donor-Acceptor in Nonlinear Lattices** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *In entropy*, volume 18, 2016.

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- [669] **Comment on "Direct linear term in the equation of state of plasmas"** (Alastuey, A., Ballenegger, V., and Ebeling, W.), *In Physical Review E*, American Physical Society, volume 92, pp. 047101, 2015.
- [668] **Wave motions along lattices with nonlinear on-site and inter-site potentials. Cooperation and/or competition leading to lattice solitons and/or discrete breathers** (Velarde, M. G., Chetverikov, A. P., Ebeling, W., Dmitriev, S. V., and Lakhno, V. D.), *In Proceedings of the Estonian Academy of Sciences*, volume 64, pp. 396-404, 2015.
- [667] **Analysis of linear and nonlinear conductivity of plasma-like systems on the basis of the Fokker-Planck equation** (Trigger, S. A., Ebeling, W., van Heijst, G. J. F., and Litinski, D.), *In Physics of Plasmas*, volume 22, pp. 042108, 2015.
- [666] **Selforganization of Information and Value - Discussion of the Relations to Physics** (Ebeling, W.), 2015.
- [665] **Selforganization of Symbols and Information** (Ebeling, W. and Feistel, R.), *Chapter in Chaos, Information Processing and Paradoxical Games*, pp. 141-184, 2015.

- [664] **The unlikely high efficiency of a molecular motor based on active motion** (Ebeling, W.), *In The European Physical Journal Special Topics*, volume 224, pp. 1395-1403, 2015.
- [663] **Solitons and Charge Transport in Triangular and Quadratic Crystal Lattices** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *Chapter in Quodons in Mica*, Springer International Publishing, volume 221, pp. 321-339, 2015.
- [662] **On the temperature dependence of fast electron transport in crystal lattices** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *In The European Physical Journal B*, volume 66, pp. 1-7, 2015.
- [661] **Bound States of Electrons in Harmonic and Anharmonic Crystal Lattices** (Brizhik, L., Chetverikov, A. P., Ebeling, W., Röpke, G., and Velarde, M. G.), *Chapter in Quodons in Mica* (Archilla, J. F. R., Jiménez, N., Sánchez-Morcillo, V. J., García-Raffi, L. M., eds.), Springer International Publishing, volume 221, pp. 291-319, 2015.
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- [658] **Two-Dimensional Anharmonic Crystal Lattices: Solitons, Solectrons, and Electric Conduction** (Velarde, M. G., Ebeling, W., and Chetverikov, A. P.), *In Frontiers of Fundamental Physics and Physics Education Research*, pp. 3-13, 2014.
- [657] ~~**A geometric definition of Gabrielov numbers** (Ebeling, W. and Takahashi, A.), *In Revista Matemática Complutense*, volume 27, pp. 447-460, 2014.~~
- [656] **Über das Gedächtnis des Zufalls – zur Dialektik von Gesetz und Zufall** (Ebeling, W.), *In Sitzungen der Leibniz-Sozietät der Wissenschaften zu Berlin*, volume 118, pp. 71-78, 2014.
- [655] **Modellierungskonzepte der Synergetik und der Theorie der Selbstorganisation** (Ebeling, W. and Scharnhorst, A.), *Chapter in Handbuch Modellbildung und Simulation in den Sozialwissenschaften*, pp. 419-452, 2014.
- [654] **Analysis of Linear and Nonlinear Conductivity of Plasma-Like Systems on the Basis of the Fokker-Planck Equation** (Rosé, H., Ebeling, W., and Asselmeyer, T.), *In Physics of Plasmas*, pp. 1-14, 2014.
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- [652] **Models of active Brownian motors based on internal oscillations** (Romanovsky, Y. M., Kargovsky, A., and Ebeling, W.), *In The European Physical Journal Special Topics*, volume 222, pp. 2465-2479, 2013.
- [651] **Onsagers fluctuation theory and new developments including non-equilibrium levy fluctuations** (Kusmierz, L., Ebeling, W., Sokolov, I. M., and Gudowska-Nowak, E.), *In Acta Physica Polonica*, volume 44, pp. 859-887, 2013.
- [650] **Controlling uphill motion of an active Brownian particle driven by shot-noise energy pulses** (Fiasconaro, A., Gudowska-Nowak, E., and Ebeling, W.), *In Physical Review E*, volume 87, pp. 032111\_1-032111\_6, 2013.
- [649] ~~**Mirror Symmetry between Orbifold Curves and Cusp Singularities with Group Action** (Ebeling, W. and Takahashi, A.), *In International Mathematics Research Notices*, pp. 2240-2270, 2013.~~
- [648] **On bifurcations in complex ecological systems with diffusion and noise** (Ebeling, W., Feistel, R., and Feistel, S.), *In Ecological Complexity*, volume 14, pp. 2-7, 2013.
- [647] ~~**Variance of the exponents of orbifold landau-ginzburg models** (Ebeling, W. and Takahashi, A.), *In Mathematical Research Letters*, volume 20, pp. 65-79, 2013.~~

- [646] ~~A geometric construction of Coxeter-Dynkin diagrams of bimodal singularities (Ebeling, W. and Ploog, D.), In , volume 140, pp. 195-212, 2013.~~
- [645] **Nonlinear soliton-like excitations in two-dimensional lattices and charge transport** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *In The European Physical Journal Special Topics*, volume 222, pp. 2531-2564, 2013.
- [644] **Towards a theory of degenerated solitons in doped lattices: Problems and perspectives** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *Chapter in Understanding Complex Systems: Without Bounds: A Scientific Canvas of Nonlinearity and Complex Dynamics*, pp. 443-466, 2013.

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- [642] **Soliton-mediated compression density waves and charge density in 2d layers of underdoped cuprate-like lattices** (Velarde, M. G., Ebeling, W., and Chetverikov, A. P.), *In Comptes Rendus Mecanique*, volume 340, pp. 910-916, 2012.
- [641] **Active Brownian particles From Individual to Collective Stochastic dynamics** (Romanczuk, P., Baer, M., Ebeling, W., Lindner, B., and Schimansky-Geier, L.), *In The European Physical Journal Special Topics*, volume 202, pp. 1-162, 2012.
- [640] ~~Saito duality between Burnside rings for pdf - /2012-Ebeling + Gusein-Zade BullLonMatSoc/2012-Ebeling + Gusein-Zade BullLonMatSoc.pdf, invertible polynomials (Ebeling, W. and Gusein-Zade, S. M.), In Bulletin of the London Mathematical Society, volume 44, pp. 814-822, 2012.~~
- [639] ~~Equivariant Poincaré series and monodromy zeta functions of quasihomogeneous polynomials (Ebeling, W. and Gusein-Zade, S. M.), In Publications Research Institute For Mathematical Sciences, volume 48, pp. 653-660, 2012.~~
- [638] **Über den Zwang zur Philosophie in den Naturwissenschaften und die Schwierigkeiten des Einzelwissenschaftlers mit dem Wertbegriff – Fragen an Hermann Ley** (Ebeling, W.), *Chapter in , Kleine Verlag*, pp. 145-152, 2012.
- [637] **Controlling fast electron transfer at the nano-scale by solitonic excitations along crystallographic axes** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *In European Physical Journal B*, volume 85, pp. 291, 2012.
- [636] **Bound States in Coulomb Systems - Old Problems and New Solutions** (Ebeling, W., Kraeft, W. D., and Röpke, G.), *In Contributions to Plasma Physics*, WILEY-VCH Verlag, volume 52, pp. 7-16, 2012.
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- [634] **On the quantum statistics of bound states within the Rutherford model of matter** (Ebeling, W., Kraeft, W. D., and Röpke, G.), *In Annalen der Physik*, WILEY-VCH Verlag, volume 524, pp. 311-326, 2012.

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- [628] **Physics of Self-Organization and Evolution** (Feistel, R. and Ebeling, W.), WILEY-VCH Verlag, 2011.
- [627] **Introduction to the reaction theory and cluster dynamics of enzymes** (Ebeling, W., Ntrepko, A., and Romanovsky, Y. M.), *Chapter in 1*, WORLD SCIENTIFIC, pp. 1-35, 2011.
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- ~~[624] **Strange duality of weighted homogeneous polynomials** (Ebeling, W. and Takahashi, A.), *In Compositio Mathematica*, volume 147, pp. 1413-1433, 2011.~~
- [623] **Localized nonlinear, soliton-like waves in two-dimensional anharmonic lattices** (Chetverikov, A. P., Ebeling, W., and Velarde, M. G.), *In Wave Motion*, volume 48, pp. 753-760, 2011.
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