

Datenschutzerklärung

Papers by Benno Fuchssteiner

Eine assoziative Algebra über einem Unterraum der Distributionen, Math. Ann. 178, 302 - 314 (1968)

[together with F.Beck]:

Approximation of Green's Functions consistent with their Symmetries and Conservation Laws, Z.Phys. 239, 276 - 288 (1970)

An Application of Second-order Approximations for the Green's Functions, Z. Phys. 240, 17 - 29 (1970)

Konvexe Mengen und ein Theorem von
Titchmarsh, Arch.Math. 21, 201- 206

Verallgemeinerte Konvexitätsbegriffe
und der Satz von Krein-Milman,
Math. Ann. 186, 149 - 154 (1970)

Verallgemeinerte Konvexitätsbegriffe
und L_p -Räume, Math. Ann. 186, 171 -
176 (1970)

Bemerkungen zu den Minimumsätzen
von H. Bauer, Arch. Math. 22, 287 - 290
(1971)

Extrempunkte und Minimumsätze bei
Hüllenbildungen, Arch. Math. 22, 523 -
527 (1971)

[together with W. Hackenbroch]:

[Maximumpunkte](#), Arch. Math. 23, 415 - 421 (1972)

[Sur les faces exposées](#), C.R.Acad.Sci. Paris A 274, 38 - 40 (1972)

[Sur les mesures de Jensen supportées par une frontière plus fine que la frontière de Chilov](#), C.R. Acad.Sci.Paris A 274, 1809 - 1812 (1972)

[Sandwich theorems and Lattice semi-groups](#), J. Functional Analysis 16, 1 - 14 (1974)

[Lattices and Choquets Theorem](#), J. Functional Analysis 17, 377 - 387 (1974)

Maße auf sigma - kompakten Räumen,
Math.Z. 142, 185 - 190 (1175)

Integraldarstellungen linearer Funktionale,
in: Springer Lecture Notes Nr. 541,
255 - 266 (1976) 1

When does the Riesz representation
theorem hold? Arch.Math. 28, 173 - 181
(1977)

Signed representing measures, Arch.
Math. 28, 503 - 509 (1977)

On exposed semigroup homomorphisms,
Semigroup Forum 13, 189 - 204 (1977)

[together with J.D. Maitland Wright]:
Representing Isotone Operators on Co-

nes, Quart. J.Math. Oxford 28, 155 - 162
(1977)

Decomposition Theorems, Manuscripta
Mathematica 22, 151 -164 (1977)

Iterations and Fixpoints, Pacific Journal
of Math. 68, 73 - 79 (1977)

Pure soliton solutions of some nonlinear
Partial Differential Equations, Com-
mun.Mathematical Physics 55, 187 - 194
(1977)

[as Jan Felix]:

Widerspruchsfreiheit und Un-
abhängigkeit, Jahrbuch Überblicke Ma-
thematik 1977, p.9-27, Bibliographisches
Institut, Mannheim (1977)

[together with M. Neumann]:

[Small boundaries](#), Arch.Math. 30, 613 - 621 (1978)

[Application of Hereditary Symmetries to Nonlinear Evolution Equations](#), Nonlinear Analysis 3, 849 - 862 (1979)

[together with J. Horvath]:

[Die Bedeutung der Schnitteigenschaften beim Hahn-Banachschen Satz](#), Jahrbuch Überblicke Mathematik 1979, 107-121

[together with J. Horvath]:

[Addendum to "Bedeutung der Schnitteigenschaften"](#), Jahrbuch Überblicke Mathematik 1984, 273-275

[together with A. Schröder]:

[Production and Distribution](#), in: Game Theory and Related Topics, North Holland Publishers, 281-290 (1979) Editors: O. Möschlin, D. Pallaschke

[together with H. König]:

[New Versions of the Hahn-Banach Theorem](#), in: General Inequalities, ISNM 47 (Editor: E.F. Beckenbach), Birkhäuser-Verlag, 255-266 (1980)

[Application of Spectral Gradient Methods to Nonlinear Equations](#), unpublished but at that time widely quoted

[together with A.S. Fokas]:

[On the Structure of Symplectic Operators and Hereditary Symmetries](#), L.

Nuovo Cimento, 28, 299-307 (1980)

Comparison of the two-Soliton Collision for several Nonlinear Evolution Equations, Lett.Math.Phys. 4, 117-183 (1980)

Dirichlet states, Journ. of Math.Soc. Japan 32, 593-603 (1980)

Generalized Hewitt-Nachbin spaces arising in state space completions, in: Advances in Functional Analysis, Holomorphy and Approximation Theory, Springer Lecture Notes in Math, Vol.843, 296-318 (1981)

The Lie Algebra Structure of Nonlinear Evolution Equations admitting Infinite Dimensional Abelian Symmetry Groups,

Progress of Theoretical Physics 65, 861-876 (1981)

[together with A.S. Fokas]:

[Bäcklund Transformations for Hereditary Symmetries](#), Nonlinear Analysis TMA 5, 423-432 (1981)

[Disintegration Methods in Mathematical Economics](#), in: Game Theory and Related Topics (O. Moeschlin, D. Pallaschke eds.) North-Holland Publishers, Amsterdam-New York 1981, p. 193-204

[An abstract Disintegration Theorem](#), Pacific Journal of Math. 94, 303-309 (1981)

[together with A.S. Fokas]:

[Symplectic Structures their Bäcklund](#)

Transformations and Hereditary Symmetries, Physica 4D, 47-66 (1981)

Daniell Lattices and Adapted Cones, Arch. Math. 37, 528-532 (1981)

[together with E.F. Hefter]:

Comment on connections between non-linear evolution equations, Phys.Rev. D 24, 2769-2771 (1981)

[together with A.S. Fokas]:

The Hierarchy of the Benjamin-Ono Equation, Physics Letters 86A, 341- 345 (1981)

[together with W. Oevel]:

The bi-Hamiltonian Structure of some Nonlinear fifth- and seventh- order Diffe-

rential Equations and Recursion Formulas for their Symmetries and conserved Covariants, J.Math.Phys. 23, 358-363 (1982)

[together with W. Oevel]:
Explicit Formulas for symmetries and Conservation laws of the Kadomtsev - Petviashvili equation, Physics Letters, 88, 323-327 (1982)

The Lie Algebra Structure of Degenerate Hamiltonian and Bi-Hamiltonian Systems, Progress of Theoretical Physics 68, 1082-1104 (1982)

Mastersymmetries: Higher order Time-Dependent symmetries and conserved Densities of Nonlinear Evolution Equa-

tions, Progr. of Theoretical Physics
70,1508-1522 (1983)

Soliton-Gleichungen, Jahrbuch
Überblicke Mathematik 1984, p.9-36,
Bibliographisches Institut, Mannheim
(1984)

Algebraic Foundation of some distribu-
tion algebras, Studia Mathematica 76,
439-453 (1984)

Distribution Algebras and Elementary
shock wave analysis, in: Advances in
Computer Methods for partial differenti-
al equations, 469-475, IMACS 1984 (R.
Vichnevetsky, R.S. Stepleman Editors)

On the Hierarchy of the Landau-Lifshitz

equation, Physica 13 D, 387-394 (1984)

Mastersymmetries for Completely integrable Systems in Statistical Mechanics, Proceeding of the Sitges Conference 1984, Springer Lecture Notes in Physics 216 (L. Garrido ed.) p.305-315, Berlin - Heidelberg - New York 1985

[together with E. Barouch]:

Master symmetries and similarity Equations of the XYh-Model, Studies in Appl. Math. 73, 221-237, 1985

Exposed Fixpoints in Order-structures, in: Aspects of Mathematics and its Applications p.359-376, Elsevier Science Publishers, Amsterdam (1986)

Some recent results on Solitons, symmetries and Conservation Laws, in: Nonlinear Dynamics, Proceedings of the 14th ICGTMP Seoul Korea 26-30 August 1985, p.421-424, World Scientific Publ., Singapore 1986 World Scientific Publ. 1986

[together with R.N. Aiyer, W. Oevel]:
Multisolitons, or the discrete Eigenfunctions of the Recursion Operator of nonlinear Evolution Equations I: The Caudrey-Dodd-Gibbon-Kotera-Sawada-equation, J. Physics, 19A, 3755-3770, 1986

[together with R.N. Aiyer]:
Multisolitons, or the discrete eigenfunctions of the recursion operator of nonlinear

evolution equations I: Background, J. Physics, 20A, 375-388, 1987

[together with W.Oevel und W.Wiwianka]:

Computer-algebra methods for Investigation of Hereditary Operators of higher order Soliton Equations, Computer Physics Comm. 44, p. 47-55, 1987

From Single Solitons to Auto-Bäcklund Transformations and Hereditary Symmetries, in: Topics in Soliton Theory and exactly solvable nonlinear Equations (M.J.Ablowitz, B.Fuchssteiner and M. Kruskal ed.), p. 230-254, Singapore, World Scientific Publishers 1987

[together with W.Oevel]:

New Hierarchies of nonlinear completely integrable Systems related to a change of variables for evolution parameters, *Physica* 68A, p 67-95 1987

Solitons in Interaction, Progress of Theoretical Physics, p 1022-1050, 1987

[together with U. Falck]:

Computer algorithms for the detection of completely integrable quantum spin chains, in: Symmetries and nonlinear phenomena (D. Levi and P. Winternitz ed.), p. 22-50, Singapore, World Scientific Publishers 1988

The dynamical behavior of inteacting solitons, in: Nonlinear Evolutions (J.J. P. Jerome ed.), p. 13-32, Singapore, World

Scientific Publishers 1988

[together with S. Carillo]:

Soliton structure versus singularity analysis: Third order completely integrable nonlinear equations in 1+1 dimensions, Physica A 152, p 467-510, 1989

[together with S. Carillo]:

The abundant symmetry structure of hierarchies of nonlinear equations obtained by reciprocal links, 20 pages, Journal of Mathematical Physics 1989

[together with W. Oevel und H. Zhang]:

Mastersymmetries and multi-Hamiltonian formulations for some integrable lattice systems, Progress of theoretical Physics, 81, p. 294-308, 1989

[together with W. Oevel, Hongwei Zhang und O. Ragnisco]:

Mastersymmetries, Angle variables and recursion operator of the relativistic Toda lattice, J. Math. Phys., 30, p.2664-2670, 1989

[together with S. Carillo]:

Non commutative Symmetries and new solutions of the Harry Dym equation, in: Nonlinear Evolution Equations: Integrability and spectral methods, Proceedings in Nonlinear Science, Manchester University Press, Manchester-New York, p.351-366, 1990

[together with S. Carillo]:

The soliton singularity transform, in:

Nonlinear Evolution Equations: Integrability and spectral methods, Proceedings in Nonlinear Science, Manchester University Press, Manchester-New York, p.159-174, 1990

[together with G. Oevel]:

Geometry and action-angle variables of multisoliton systems, Reviews in Mathematical Physics, 1, p.415-479, 1990

[together with G. Oevel]:

Action-angle representation of Multisolitons, Appl. Math. Lett. 3, p. 75-78, 1990

[together with S. Carillo]:

The Action-Angle transformation for Soliton Equations, Physica, 166 A, p.651-675, 1990

[together with Gudrun Oevel and M. Blaszak]:

Action Angle representation of multisolitons by potentials of Mastersymmetries, Progress Theoretical Physics , 83, p.395-413, 1990

[together with Gudrun Oevel and M. Blaszak]:

Action Angle variables and asymptotic data, in: Research reports in Physics - Nonlinear Dynamics, Springer Verlag, Berlin-Heidelberg-New York, S. Carillo and O. Ragnisco, eds. , p.123-126, 1990

[together with W. Wiwianka]:

Algorithms to detect complete integrability in 1+1 - dimension, in: Research

reports in Physics - Nonlinear Dynamics,
Springer Verlag, Berlin-Heidelberg-New
York, S. Carillo and O. Ragnisco, eds. ,
p.131-135, 1990

[together with S. Carillo]:

[The Action-Angle transformation for the Korteweg-deVries Equation](#), in: Research reports in Physics - Nonlinear Dynamics, Springer Verlag, Berlin-Heidelberg-New York, S. Carillo and O. Ragnisco, eds. , p.127-130, 1990

[The Tangent Bundle for Multisolitons: Ideal Structure for Completely Integrable Systems](#), in: Research reports in Physics - Nonlinear Dynamics, Springer Verlag, Berlin-Heidelberg-New York, S. Carillo and O. Ragnisco, eds. , p.114-122, 1990

[together with S. Carillo and B.G. Konopelchenko]:

The action-angle transformation for interacting Solitons and the dynamic of eigenfunctions for soliton equations, Rendiconti di Matematica, Serie VII, 11, p.351-376, 1991

[together with H. Zhang, G. Tu and W. Oevel]:

Symmetries, Conserved Quantities and Hierarchies for some Lattice Systems with Soliton Structure, J. Math. Phys., 32, p.1908-1918, 1991

Hamiltonian structure and Integrability, in: Nonlinear Systems in the Applied Sciences, Mathematics in Science and

Engineering Vol. 185 Academic Press,
C. Rogers and W. Ames eds., p.211-256,
1991

Linear aspects in the theory of Soli-
tons and nonlinear integrable equations,
Journal of the Phys. Soc. Japan, 60,
p.1473-1496, 1991

Filter Automata admitting oscillating
Carrier Waves, Appl. Math. Lett., 4,
p.23-26, 1991

[together with T. Schulze and S. Carillo]:
Explicit Solutions for the Harry Dym
Equation, J. of Physics, 25A, p.223-230,
1992

[together with G. Oevel]:

Unified Approach to Action-Angle Representation of real and complex Multi-solitons, Physica, A 181, p.364-384, 1992

[together with S. Carillo]:

A new class of nonlinear partial differential equations solvable by quadratures, in: Geometry and Analysis: Trends in Teaching and Research, B. Fuchssteiner and W. A. J. Luxemburg, eds., Bibliographisches Institut Mannheim, p.73-85, 1992

Nichtlineare Dynamische Systeme: Eine Fallstudie für die Anwendung von Computeralgebramethoden, in: Geometry and Analysis: Trends in Teaching and Research, B. Fuchssteiner and W. A. J. Luxemburg, eds., Bibliographische

Institut Mannheim, p.217-239, 1992

An alternate dynamical description of Quantum Systems, in: Groups and related topics, Proceedings of the first Max Born Symposium, Wroclaw 1991, R. Gierak, J. Lukierski and Z. Popowicz eds., Kluwer Academic Publishers, p.165-178, 1992

Computer Algebra: Implications and Perspectives, Euromath Bulletin , 1, p.21-38, 1992

Deutsche Version von "Computer Algebra: Implications and Perspectives".

[together with M. Lo Schiavo]:
Nonlinear PDE's and Recursive Flows:

[Theory](#), Appl. Math. Letters, 6, p.97-100,
1993

[together with M. Lo Schiavo]:

[Nonlinear PDE's and Recursive Flows:
Applications](#), Appl. Math. Letters, 6,
p.101-104, 1993

[Coupling of completely integrable systems:
The perturbation Bundle](#), in:
Applications of Analytic and Geometric
Methods to Nonlinear Differential Equations,
ed: P. Clarkson, Kluwer Academic
Publ., Series: Matheamtical and Physical
Sciences, 423, p.125-138, 1993

[together with M. Lo Schiavo]:

[Nilpotent and Recursive Flows](#), Manus-
cripta Mathematica, 79, p.27-48, 1993

Integrable Nonlinear Evolution Equations with time-dependent Coefficients, Journal of Mathematical Physics, 34, p.5140-5158, 1993

[together with Francois Ollivier, Fritz Schwarz, Werner M. Seiler, Felix Ulmer]:
Symbolische Behandlung von Differentialgleichungen in: Computeralgebra in Deutschland - Bestandsaufnahme, Möglichkeiten, Perspektiven, Herausgegeben von der Fachgruppe Computeralgebra der GI, DMV, GAMM, Passau und Heidelberg, p. 61-72, 1993

Solitonen in: Computeralgebra in Deutschland - Bestandsaufnahme, Möglichkeiten, Perspektiven, Herausge-

geben von der Fachgruppe Computeralgebra der GI, DMV, GAMM, Passau und Heidelberg, p. 111-117, 1993

[together with Waldemar Wiwianka]:
[Computeralgebra-Anwendungen bei nichtlinearen Systemen](#) in: Computeralgebra in Deutschland - Bestandsaufnahme, Möglichkeiten, Perspektiven, Herausgegeben von der Fachgruppe Computeralgebra der GI, DMV, GAMM, Passau und Heidelberg, p. 123-126, 1993

[together with Karsten Morisse, Waldemar Wiwianka]:
[Systeme für parallele Architekturen: MuPAD](#) in: Computeralgebra in Deutschland - Bestandsaufnahme, Möglichkeiten, Perspektiven, Herausgegeben von der

Fachgruppe Computeralgebra der GI,
DMV, GAMM, Passau und Heidelberg,
p. 180-185, 1993

[together with Waldemar Wiwianka]:
[SymmPAD: Symmetriesuche per Computer](#), in: Computeralgebra in Deutschland - Bestandsaufnahme, Möglichkeiten, Perspektiven, Herausgegeben von der Fachgruppe Computeralgebra der GI, DMV, GAMM, Passau und Heidelberg, p. 270-274, 1993

[together with S. Carillo]:
[Some remarks on a class of ordinary differential equations: The Riccati Property](#), in: Modern Group Analysis, N.H. Ibragimov et al. eds., Kluwer Academic Publ., Boston - Dordrecht - London, 1993

[Computeralgebra](#), in: Teubner-Taschenbuch der Mathematik Teil I I, Teubner Verlag, Stuttgart-Leipzig, p.111-125, 1995

[A nonlinear N-Particle Model](#), in: Nonlinear, Deformed and Irreversible Quantum Systems, H. D. Doebner, V. K. Dobrev, P. Nattermann eds., World Scientific Publishers, Singapore, p.205-213, 1995

[together with T. Schulze]:

[A new integrable system: The interacting soliton of the BO](#), Phys. Lett., A 204, p.336-342, 1995

[together with V.V. Tsegel'nik]:

[Analiticheskie svo jstva reschenij odnoj](#)

nelinejnoj sistemy uravnenij v chastnikh proizvodnikh, Teoreticheskaya i Matematicheskaya Fizika, 105, 1995 p.208-213,

[together with V.V. Tsegel'nik]:

Analytical Properties of Solutions to a system of nonlinear partial differential equations, Theoretical and Mathematical Physics, 105, 1995 p.1354-1358,

[together with A. Roy Chowdhury]:

A new approach to the Quantum KdV, Chaos, Solitons and Fractals, 5, p.2345-2355, 1995

[together with Wen Xiu Ma]:

Explicit and exact solution to a Kolmogorov-Petrovskii-Piskunov equation, Int. J. Nonlinear Mech., 105, 1996

p.329-338,

[together with Wen Xiu Ma]:

Binary nonlinearization of Lax Pairs,
in: Nonlinear Physics: Theory and Experiment, Proc. Int. Conf. of Nonlinear Physics, Gallipoli, 1995, World Scientific, 1996 p.217 - 224,

[together with Wen Xiu Ma]:

The Bi-Hamiltonian structure of the perturbation Equations of the KdV hierarchy, Phys. Lett. A, 213, p.49-55, 1996

[together with Wen Xiu Ma]:

Integrable theory of the perturbation equations, Chaos, Solitons and Fractals, 7, p.1227-1250, 1996

[together with K. Morisse]:

Infinite networks: Minimal cost flows,
Appl. Math. Lett., 9, p.89 - 93, 1996

The interacton equation, Physica A, 228,
1996 p.189-211,

Compatibility in abstract Algebraic
Structures, Proceedings in memory of
Irene Dorfman, A. Fokas, I.M. Gelfand
eds., Birkhäuser Verlag, 1996

Some tricks from the Symmetry-Toolbox
for Nonlinear equations: Generalizations
of the Camassa-Holm equation, Physica,
D 95, 1996 p.229-243,

Symmetrien bei partiellen Differential-
gleichungen - ein Anwendungsfeld der

Computeralgebra, Spektrum der Wissenschaft, 1996 3/1996, p.102-104 104,

[together with Wen Xiu Ma and W. Oevel]:

A 3×3 matrix spectral problem for AKNS hierarchy and its binary nonlinearization, Physica A, 233, 1996 p.331-354,

[together with K. Morisse]:

Flows in Infinite Networks Represented by Vector Lattices, Appl. Math. Lett., 10, p.57-61, 1997

Computeralgebrasysteme: Stand der Technik und Perspektiven, in: Proceedings Analog '96, 4. GMM/ITG-Diskussionssitzung: Entwicklungen von Ananalogschaltungen und CAE Methoden,

Berlin, ISSN 0944-3819, 1997

[together with S. Ivanov and W. Wiwianka]:

Algorithmic determination of infinite dimensional symmetry groups for integrable systems in 1+1 dimensions, Mathematical and Computer Modelling, 25, p.91-100, 1998

Computeralgebra: does it offer new means for doing and teaching mathematics, keynote, ICTMT - 3, The Third International Conference on Technology in Mathematics Teaching September 29th - October 2nd, 1997, University of Koblenz Germany, published on CD by Institute für Mediendidaktik Koblenz, W. Fraunholz, ed., 1998

[together with Wen Xiu Ma]:

[An approach to master symmetries of lattice equations](#), Symmetries and Integrability of Difference equations, London Math. Soc. Lecture Note Series 255, 1999 p.247 - 260,

[together with A. Kemper]:

[Multi-dimensional fast rule filter Automata](#), Physica D 129, p.130 - 142, 1999

[together with Wen Xiu Ma]:

[Algebraic structure of discrete zero curvature equations and master symmetries of discrete evolution equations](#), Journal of Mathematical Physics, 40, p.2400-2418, 1999

Individuelle Leistungskontrolle bei mathematischen Massenvorlesungen, Computer Algebra Rundbrief, Oktober 2002, p.15-19

[together with O. Bogoyavlenskij]:
Vicious MHD Solutions with no Transfer of Energy through the Spectrum, Reports on Mathematical Physics, 54, p.115-130, 2004

[together with O. Bogoyavlenskij]:
Exact MHD Solutions with crystallographic Symmetries and non-interacting Fourier Modes, Physics Letters A, 331, p.53-59, 2004

[together with O. Bogoyavlenskij]:
Exact NSE Solutions with crystallo-

graphic Symmetries and no Transfer of Energy through the Spectrum, Journal of Geometry and Physics, 54, p.324-338, 2005

[together with M. Ziegler]:
Nonlinear Reformulation of Heisenberg's Dynamics, International Journal of Theoretical Physics, Vol. 44, No. 7, July 2005

[together with Kai Gehrs]:
Some notes on basics in differential Galois theory, unpublished, 2007

Modified Gauss Algorithm for Matrices with Symbolic Entries, ACM Communications in Computer Algebra, Vol. 42, No. 3, September 2008.

Die Wissenschaft zur Zeit der Kirchenreform, in: Stephan Müller/Jens Schneider (Hg.), Deutsche Texte der Salierzeit, Neuanfänge und Kontinuitäten im 11. Jahrhundert, Mittelalter-Studien, Seiten 61-65, Fink Verlag München, 2010.

[together with K. Gehrs]:

Constellation Problems and Integrability for linear ODE's with constant Coefficients, International Journal of Pure and Applied Mathematics, Vol. 72 No. 3 2011, 259-278

An extension of the Liouville-Arnold theorem to the non-Hamiltonian case published in: [researchgate.net](https://www.researchgate.net) april 2015.

Solitons and Monads, at: 7th European

Congress of Mathematics, Berlin, July
20, 2016