

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. Pa-
ris 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. Func-
tional 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)

Ein Jahrtausendereignis, Jahrbuch
Überblicke Mathematik 1977, p.171-173,
Bibliographisches Institut, Mannheim
(1977)

J. Scott Russel, Jahrbuch Überblicke
Mathematik 1978, 217-219

[together with M. Neumann]:

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

Application of Hereditary Symmetries to
Nonlinear Evolution Equations, Nonline-
ar 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 S. D. Chatterji]:
Der 18. Internationale Mathematikerkon-
greß (ICM) in Helsinki, 15.-23. August
1978, Jahrbuch Überblicke Mathematik
1979, 145-151

[together with J. Horvath]:
Addendum to "Bedeutung der Schnit-
teigenschaften", Jahrbuch Überblicke
Mathematik 1984, 273-275

[together with A. Schröder]:
Production and Distribution, in: Game
Theory and Related Topics, North Hol-
land 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 Heredita-

ry 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 Differential 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 Equations, 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 distribution algebras, *Studia Mathematica* 76, 439-453 (1984)

Distribution Algebras and Elementary shock wave analysis, in: *Advances in Computer Methods for partial differential 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 an 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 Eigen-
functions 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 eigenfuncti-
ons 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 obtai-
ned by reciprocal links, 20 pages, Journal
of Mathematical Physics 1989

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

Mastersymmetries and multi-
Hamiltonian formulations for some inte-
grable lattice systems, Progress of theo-
retical 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 singularty 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 Re-
presentation 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 Computeralgebriemethoden, 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 Equa-
tions, 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 Equa-
tions 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, Herausgegeben 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 Ex-

periment, 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 Differentialgleichungen - 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 Analogschaltungen 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. So c. Lecture Note Series 255,
1999 p.247 - 260,

[together with A. Kemper]:

Multi-dimensional fast rule filter *Auto-
mata*, *Physica D* 129, p.130 - 142, 1999

[together with Wen Xiu Ma]:

Algebraic structure of discrete zero cur-
vature equations and master symmetries
of discrete evolution equations, *Journal of
Mathematical Physics*, 40, p.2400-2418,
1999

Individuelle Leistungskontrolle bei ma-
thematischen Massenvorlesungen, *Com-
puter 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 crystallographic 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 Theo-
retical Physics, Vol. 44, No. 7, July 2005

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

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

Die Wissenschaft zur Zeit der Kirchenre-
form, 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