



September 2009

CURRICULUM VITAE Hanspeter Kraft

Name	Hanspeter Kraft, Professor of Mathematics Chairman of Department
Birthdate	February 29, 1944 in Basel (Swiss Nationality)
Education	1963-69 Studies at the University of Basel 1967 Diploma in Mathematics and Physics 1969 PhD in Mathematics
Career	1965-69 Assistent at Math. Dept. Univ. of Basel 1970-74 Bonn University; Research Fellowship from Swiss National Science Foundation 1974 Habilitation, University of Bonn 1974/75 Lecturer at University of Regensburg 1975 Visiting Professor at the SFB Bonn 1976-79 Associated Professor, University of Bonn 1979-81 Full Professor, University of Hamburg 1981- Full Professor, University of Basel 1992-94 Dean of the Faculty of Natural Sciences
Visiting Positions	MIT (Cambridge USA), Fall 1979 ETH Zürich (Switzerland), Dec./Jan. 1979/80 University of Rome (Italy), Spring 1980 Univ. Paris VI (France), March 1981 Univ. Grenoble (France), March 1984 Brandeis University (Mass. USA), 1985/86 University of Notre Dame (Indiana), Feb. 1986 UBC (Vancouver, Canada), March 1986 Univ. Paris VII (France), July 1987 University of Mexico, August 1987 University of Honolulu (USA), Feb./March 1988 Univ. of Paris VII (France), March 1989 UC San Diego (Fall 1991 to 2001, Spring 2002) Brandeis University (Spring 1995, 1997 and 2001) McGill University (Montreal) Spring 2002 University of Sydney (Summer 2002, Summer 2007) University of Singapore (2002, 2006, 2007) UC San Diego (Fall 2002, 2003, 2004, 2005, 2006) Lie Center in Nordfjordeid (Summer 2008) University of Eindhoven (Summer 2009)

Other Positions

Editor in Chief of Comment. Math. Helvetici
(until 2006)
Editor of Manuscripta Mathematica (until 1994)
Consultant and Member of the Board of Trustees
of Birkhäuser Company
Member of the Board of Administration of the
IHES (Paris, Bures-sur-Yvette, until 1999)
Member of the Program Committee of the ICM 94
in Zürich
Member of the Scientific Board of CIRM (Centre
Internationale de Rencontres Mathématiques at
Luminy , Marseille, France, until 1999)
Member of Schweizerische Studienstiftung
(in charge of the Bildungsprogramm)
Member of Planungskommission Universität Basel
(until Spring 2000)
President (Vorsitzender) of the Scientific Board
(wissenschaftliche Kommission) of the
Forschungsinstitut Oberwolfach (since Fall 1999)
President of the Euler Commission (since 2004)
President 2007 of the Swiss Academy of Sciences
(SCNAT, Euler Year 2007)

Family Status Married since 1966, 3 Children

Address private: Oberer Batterieweg 76
CH-4059 BASEL (Switzerland)
phone: +4161 363 32 12
fax +4161 363 32 10

business: Mathematisches Institut
Universität Basel
Rheinsprung 21
CH-4051 BASEL (Switzerland)
phone: +4161 267 26 90
fax: +4161 267 26 95
Email: Hanspeter.Kraft@unibas.ch
<http://www.math.unibas.ch/~kraft/>

PUBLICATIONS Hanspeter Kraft

BOOKS

- Kommutative algebraische Gruppen und Ringe.* Springer Lecture Notes in Math. **455** (1976)
- Geometrische Methoden in der Invariantentheorie.* 2. Auflage. Aspekte der Mathematik **D1**. Vieweg Verlag (1985)
- Algebraic Transformation Groups and Invariant Theory.* With P. Slodowy and T.A. Springer. DMV Seminar, Band **13** (1989). Birkhäuser Verlag Basel-Boston-Berlin, 1989
- Topological Methods in Algebraic Transformation Groups.* With G. Schwarz and T. Petrie. Progress in Mathematics, vol. **80** (1989). Birkhäuser Verlag Basel-Boston, 1989
- Symmetry and Spaces: In Honor of Gerry Schwarz.* Progress in Mathematics, vol. **278** (2010), Campbell, H.E.A.; Helminck, L.; Kraft, H.-P.; Wehlau, D. (Eds.)

RESEARCH PAPERS

- Inseparable Körpererweiterungen.* Comment. Math. Helv. **45** (1970), 110-118
- Zerfallungskörper radizieller Körpererweiterungen.* Math. Ann. **193** (1971), 49-56
- Cohomological dimension of local fields.* Math. Z. **133** (1973), 257-274
- Über die Gelfand-Kirillov-Dimension* (with W. Borho). Math. Ann. **220** (1976), 1-24
- Über Bahnen und deren Deformationen bei linearen Aktionen reduktiver Gruppen* (with W. Borho). Comment. Math. Helv. **54** (1979), 61-104
- Parametrisierung von Konjugationsklassen in sl_n .* Math. Ann. **234** (1978), 209-220
- Classi coniugate in $GL(n, \mathbb{C})$* (with C. Procesi). Rend. Sem. Mat. Univ. Padova **59** (1978), 209-222
- Closures of conjugacy classes of matrices are normal* (with C. Procesi). Invent. math. **53** (1979), 227-247
- Minimal singularities in GL_n* (with C. Procesi). Invent. math. **62** (1981), 503-515
- Conjugacy classes and Weyl group representations.* In: Tableaux de Young et foncteurs de Schur en algèbres et géométrie. Astérisque **87/88** (1981), 191-205
- Geometric methods in representation theory.* In: Representations of Algebras. Workshop Proceedings, Puebla, Mexico 1980. Springer Lecture Notes in Math. **944** (1982), 180-258
- The geometry of representations of A_m* (with S. Abeasis and A. Del Fra). Math. Ann. **256** (1981), 401-418

- On the geometry of conjugacy classes in classical groups* (with C. Procesi).
Comment. Math. Helv. **57** (1982), 539-602
- Semisimple group actions on the three dimensional affine space are linear* (with V.L. Popov). Comment. Math. Helv. **60** (1985), 466-479
- Algebraic group actions on affine spaces*. In: Geometry Today, Giornate di Geometria, Roma 1984. Progress in Math. **60**, Birkhäuser Verlag (1985), 251-265
- Geometry of representations of quivers* (with Ch. Riedtmann). In: Representations of Algebras. Proceedings of the Durham symposium 1985. London Math. Soc. Lecture Note Series **116** (1986), 109-145
- Graded morphisms of G -modules* (with C. Procesi). Ann. Inst. Fourier **37** (1987), 161-166
- Quotient Varieties* (with T. Petrie and J.D. Randall). Adv. Math. **74** (1989), 145-162
- Closures of conjugacy classes in G_2* . J. Algebra **126** (1989), 454-465
- G -vector bundles and the linearization problem*. In: "Group Actions and Invariant Theory". Montreal Conference 1988. Canadian Math. Soc. Conference Proceedings **10** (1989), 111-124
- Linearizing reductive group actions on affine space with one-dimensional quotient* (with G. Schwarz). In: "Group Actions and Invariant Theory". Montreal Conference 1988. Canadian Math. Soc. Conference Proceedings **10** (1989), 125-132
- Klassische Invariantentheorie: Eine Einführung*. In: "Algebraische Transformationsgruppen und Invariantentheorie". Edited by H. Kraft, P. Slodowy, T.A. Springer. DMV Seminar, Band **13** (1989), 41-61. Birkhäuser Verlag Basel-Boston-Berlin, 1989
- Local properties of algebraic group actions* (with F. Knop, D. Luna, Th. Vust). In: "Algebraische Transformationsgruppen und Invariantentheorie". Edited by H. Kraft, P. Slodowy, T.A. Springer. DMV Seminar, Band **13** (1989), 63-75. Birkhäuser Verlag Basel-Boston-Berlin, 1989
- The Picard group of a G -variety* (with F. Knop, Th. Vust). In: "Algebraische Transformationsgruppen und Invariantentheorie". Edited by H. Kraft, P. Slodowy, T.A. Springer. DMV Seminar, Band **13** (1989), 77-87. Birkhäuser Verlag Basel-Boston-Berlin, 1989
- Algebraic automorphisms of affine space*. In: "Topological methods in algebraic transformation groups". Edited by H. Kraft, G. Schwarz, T. Petrie. Progress in Mathematics, vol. **80** (1989), 81-105. Birkhäuser Verlag Basel-Boston, 1989
- Reductive group actions on affine space with one-dimensional quotient*. (with G. Schwarz), in: "Group actions and invariant theory," CMS Conference Proceedings vol. **10** (1989), 125-132
- A special decomposition of the nilpotent cone in a classical Lie algebra* (with C. Procesi). In: Orbites unipotentes et représentations. Astérisque **173-174** (1990), 271-279
- C^* -actions on affine space*. In: "Operator Algebras, Unitary Representations, Enveloping Algebras, and Invariant Theory". Edited by A. Connes, M.

- Duflo, A. Joseph, R. Rentschler. *Progress in Mathematics*, vol. 92 (1990), 561-579. Birkhäuser Verlag Basel-Boston, 1990
- Algebraic automorphisms of affine space*. Proceedings of the Hyderabad Conference on Algebraic Groups 1989. Manoj Prakashan, 1991, 251 -274
- Reductive group actions with one-dimensional quotient* (with G. Schwarz). *Publ. Math. de l'IHES* 76 (1992) 1-97
- Invariant algebras and completely reducible representations* (with L. Small). *Math. Research Letters* 1 (1994) 297-307
- Finite automorphisms of affine n -space* (with G. Schwarz). In: Proceedings of the Curaçao Conference on "Automorphisms of Affine Space," 1995
- On a question of E. Stein*. In: Proceedings of the Curaçao Conference on "Automorphisms of Affine Space," 1995
- Challenging problems on affine n -space*. Séminaire Bourbaki, Vol. 1994/95, Exp. No. 802, 5, *Astérisque* 237 (1995) 295-317
- Equivariant affine line bundles and linearization* (with F. Kutzschebauch). *Math. Research Letters* 3 (1996) 619-628
- Constructive invariant theory* (with H. Derksen). In: Séminaires et Congrès, Collection SMF vol. 2 "Algèbre non-commutative, groupes quantiques et invariants" (ed. J. Alev, G. Couchon), 1997, pp. 221-244, Société mathématique France
- Principal covariants, multiplicity-free actions, and the K -types of holomorphic discrete series* (with R. Howe). In: *Geometry and Representation Theory of Real and p -adic Lie Groups* (J. Tirao, D. Vogen, J. Wolf, eds.), *Progress in Math.* vol. 158, Birkhäuser Verlag, Basel-Boston, 1998, pp. 147--161
- Degree bounds for invariants and covariants of binary forms* (with J. Weyman). Preprint 1999
- Hereditary Properties of direct Summands of Algebras* (with L. Small and N. Wallach). *Math. Research Letters* 6 (1999) 371-376
- Properties and examples of FCR-algebras* (with L. Small and N. Wallach). *Manuscripta math.* 104 (2001) 443-450
- Rational covariants of reductive groups and homaloidal polynomials* (with G.W. Schwarz). *Math. Research Letters* 8 (2002) 641-650
- On the separation property of orbits in representation spaces* (with N. Wallach). *J. Algebra* 258 (2002) 228-254
- Free C^+ actions on affine threefolds*. In: *Affine Algebraic Geometry* (Jaime Gutierrez, Vladimir Shpilrain, and Jie-Tai Yu, eds.), *Contemporary Mathematics* vol. 369, AMS, (2005)
- A result of Hermite and equations of degree 5 and 6*. *J. Algebra* 297 (2006), 234-253
- Nilpotent subspaces of maximal dimension in semisimple Lie algebras* (with Jan Draisma and Jochen Kuttler). *Compositio Math.* vol. 142 (2006) 464-476
- On the nullcone of representations of reductive groups* (with Nolan R. Wallach). *Pacific J. Math.* vol. 224 (2006) 119-140

Compression of finite group actions and covariant dimension (with G. W. Schwarz).
J. Algebra 313 (2007) 268-291

Compression of finite group actions and covariant dimension, II (with Roland
Lötscher and G. W. Schwarz). J. Algebra 322 (2009) 94-107

Polarizations and nullcone of representations of reductive groups (with Nolan R.
Wallach). Progress in Math. Vol. 278 (2009)

On families of linearizable actions (with P. Russell). In preparation

Multiplicities in multiple tensor products (with M. Bürgin). In preparation