

1. Mathematische Arbeitstagung 1957

Die Akten enthalten kein offizielles Programm. Aus der Korrespondenz konnten folgende Vortragsthemen festgestellt werden.

1) Vortragsserie                    A. Grothendieck: Kohärente Garben und verallgemeinerte Riemann-Roch-Hirzebruch-Formel auf algebraischen Mannigfaltigkeiten

2) M.F. Atiyah sprach für einen größeren Kreis über das Thema  
"Some examples of complex manifolds"

Dieser Vortrag von Atiyah wurde in den Bonner Mathematischen Schriften Nr. 6 (1958) veröffentlicht.

Das Programm der Tagung sah ungefähr wie folgt aus:

Samstag, den 13.7.:

17.30 Uhr                         A. Grothendieck

Sonntag, 14.7.:

10.15 Uhr                         Ausflug mit Dampferfahrt

Montag, 15.7.:

9.30 Uhr                         A. Grothendieck

15.15 Uhr                         M.F. Atiyah

17.15 Uhr                         N. Kuiper

Dienstag, 16.7.:

11.30 Uhr                         A. Grothendieck

15.15 Uhr                         F. Hirzebruch

Mittwoch, 17.7.:

11.30 Uhr                         A. Grothendieck

15.15 Uhr                         M.F. Atiyah

Freitag, 19.7.:

J. Tits

Samstag, 20.7.:

M.F. Atiyah

H. Grauert

## Arbeitstagung 1957

**13.-20. Juli 1957**

Atiyah:            1) Non projective algebraic surfaces  
                      2) Chern classes and connections

Grauert:           Real cross sections which are analytic

Grothendieck:     Kohärente Garben und verallgemeinerte Riemann-Roch-Hirzebruch-Formel  
                      auf algebraischen Mannigfaltigkeiten  
                      Vier lange Vorträge

Kuiper:            A generalisation of convexity

Tits:              Geometrie von Ausnahmegruppen

Hirzebruch:        $c_n(\eta) \stackrel{\wedge}{=} (n-1)! \text{ generator } H^{2n}(S^{2n}, \mathbb{Z})$

2. Mathematische Arbeitstagung 1958

Die Akten enthalten kein gedrucktes Programm. Die Tagung fand vom 9. bis 16. Juli 1958 statt. Nach privaten Aufzeichnungen haben die folgenden Herren vorgetragen:

S. Abhyankar  
R. Bott  
H. Grauert  
A. Grothendieck  
M. Kervaire  
J. Milnor  
D. Puppe  
R. Remmert  
J.-P. Serre  
K. Stein  
R. Thom

## Arbeitstagung 1958

**9.-16. Juli 1958**

- Bott: Homotopy groups of classical groups  
Grauert: Levi's problem  
Grothendieck: Rational sections in fibre spaces  
Kervaire: Parallelisability of spheres  
Milnor: Computations on cobordism  
D. Puppe: Non additive functors and cross effects  
Remmert: Plurisubharmonic functions  
Serre: Intersection theory  
Stein: Komplexe Basen zu holomorphen Abbildungen  
Thom: Combinatoric and  $C^\infty$ -manifolds  
Hirzebruch: Applications of Milnor's results
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Lecture Notes 1111 (Springer) enthält alle Programme der ersten 25 Arbeitstagungen (1957-1984). Die Akten zu AT 57 und 58 waren sehr unvollständig. N. Kuiper hatte sich aber die angegebenen Themen notiert und teilte sie mir mit Brief vom 22. Juni 1991 mit.

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3. Mathematische Arbeitstagung 1959

Die Akten enthalten nur folgende Angaben:

Samstag, den 11.7.:

17.30 - 18.30 Uhr A. Borel: Something on transformation groups

Sonntag, den 12.7.:

10.30 - 11.30 Uhr J.-P. Serre: Fundamental groups

12.00 - 13.00 Uhr D. Puppe: Semisimplicial monoid complexes

Montag, den 13.7.:

9.30 - 10.30 Uhr S. Lang: "...."

11.00 - 12.00 Uhr J. Tits: "...."

Dienstag, den 14.7.:

10.00 - 11.00 Uhr K. Stein: On proper maps

11.30 - 12.30 Uhr J.-P. Serre: Proalgebraic groups

17.00 - 17.30 Uhr Pictures

17.30 - 18.30 Uhr M.F. Atiyah: Fibre homotopy type

Mittwoch, den 15.7.:

10.00 - 11.00 Uhr A. Borel: On torsion in Lie-groups

11.30 - 12.30 Uhr H. Grauert: How to blow down

17.30 - 18.30 Uhr J. Milnor: Scissor and paste arguments

Nach privaten Aufzeichnungen haben außerdem die Herren J.F. Adams, A. Dold und N. Kuiper vorgetragen.

4. Mathematische Arbeitsstagung 1960 (11. - 17. Juni)

M.F. Atiyah: Sheaves and vector bundles

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J. Milnor: Spherical modifications

S. Smale: Poincaré's conjecture in higher dimensions (I)

M. Kervaire: A manifold without differentiable structures (I)

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J. Stallings: Combinatorial homotopy-spheres

S. Smale: Poincaré's conjecture in higher dimensions (II)

M. Kervaire: A manifold without differentiable structure (II),

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H. Grauert: Some problems concerning non-compact Kähler manifolds

S. Lang: Cross-sections on algebraic families of curves

Pictures

A. Dold: Representable functors and tensor-products

---

R. Thom: Singular homology and sheaf theory

R. Remmert: Rigid complex manifolds

---

J.F. Adams: Old-fashioned topology

A. Borel: Non-singular homology and sheaf theory

J.P. Serre: L-series

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N. Kuiper: Curvature of index k

R. Bott: Cauchy formula

M. Hirsch: Embedding theorems

5. Mathematische Arbeitstagung 1961 (16.- 23. Juni)

A. Borel: Arithmetic subgroups of Lie groups I

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J. Milnor: The handle body theorem I

M.F. Atiyah: Finiteness theorem for compact Lie groups

J. Stallings: A 5-dimensional example against the Hauptvermutung

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A. Borel: Arithmetic subgroups of Lie groups II

J. Milnor: The handle body theorem II

J. Milnor: Handle body theorem and results of Wall

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A. Andreotti: Vanishing theorems

M. Kneser: Approximation in algebraic groups

M. Kneser: Siegel's theorem and Tamagawa numbers

A. Grothendieck: Schemes of moduli

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B. Eckmann: Lusternik-Schnirelmann category

J. Tits: Flags and Bruhat's theorem

R. Palais: Conjugacy of compact diffeomorphism groups

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J. Kohn: Potential theory on non compact complex manifolds

A. Grothendieck: Duality theorems in algebraic geometry

R. Remmert: On homogeneous compact Kähler manifolds

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N. Kuiper: Manifolds admitting functions with few critical points

A. Shapiro: Graded Clifford modules

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F. Peterson: Squaring operations in a sphere bundle

I. Porteous: Homomorphisms of vector bundles

6. Mathematische Arbeitsstagung 1962 (13. - 20. Juli)

S. Lang: On the Nash embedding theorem à la Moser

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S. Smale: Stable manifolds of a diffeomorphism

H. Hironaka: Resolution of singularities

R. Swan: The Grothendieck ring of a finite group

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M.F. Atiyah: Harmonic spinors

C.T.C. Wall: Classification problems in differential topology

R. Remmert: On homogeneous compact complex manifolds

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J. Stallings: Piecewise linear approximation of stable homeomorphisms

M. Kervaire: 2-spheres in 4-manifolds

Pictures

K. Stein: Extension of meromorphic mappings

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A. Haefliger: Links

R. Abraham: Transversality of mappings

H. Grauert: Rigid singularities

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J. Eells -  
J.H. Sampson: Harmonic maps

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W. Browder: Homotopy type of differentiable manifolds

M.F. Atiyah: Explanations of my preceding lecture

N. Kuiper: Smoothing problems

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A. Kosinski: Piecewise linear functions on combinatorial manifolds

J.C. Moore: Hopf algebras

7. Mathematische Arbeitstagung 1963 (14. - 21. Juni)

S. Lang: Transcendental numbers

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M.F. Atiyah: Elliptic operators  
 J. Eells: Deformations of maps  
 M. Kervaire: Higher dimensional knots

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F. Oort: On automorphisms of varieties  
 H. Grauert: On Super-Cocycles  
 S. Lang: On Manin's theorem

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A. Haefliger: Combinatorial manifolds  
 J. Cerf:  $\Gamma_4 = 0$   
 R. Palais: Pictures  
 Integro-differential operators

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F. Hirzebruch: Elementary proof of Bott's periodicity theorem  
 S. Abhyankar: Jungian singularities  
 A. Dold: Obstruction theory for cohomology functors

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R. Thom: On generic singularities of envelopes (with slides)

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R. Palais: Integro-differential operators (II)  
 M.F. Atiyah: Boundary value problems  
 N. Kuiper: Smoothing of combinatorial manifolds

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R. Palais: Morse theory  
 V. Poenaru: Thickening and unknotting  
 Á. Császár: Allgemeine Approximationssätze

8. Mathematische Arbeitsstagung 1964 (15. - 19. Juni)

A. Borel: Introduction to automorphic forms

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N. Kuiper: The unitary group of Hilbert space is k-connected  
 R. Wood: Generalization of Bott's periodicity theorem  
 S.S. Chern: Holomorphic vector bundles

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W. Haken: Poincaré's conjecture in dimension three  
 M. Kneser: Galois cohomology of p-adic linear groups  
 W. Browder: Introduction to cobordism theory

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D. Gromoll: Exotic spheres and metrics of positive curvature  
 J. Eells: Variational theory on manifolds  
 Pictures  
 R. Sacksteder: Foliated manifolds

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K. Jänich:  $(X, \text{Fredholm}) = K(X)$

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E. Thomas: Enumeration of vector bundles  
 J.F. Adams: Some applications of K-theory to homotopy theory  
 D. Anderson: Several aspects of K-theory

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R. Wood: Pre-Palais  
 R. Palais: Index theorem for elliptic boundary problems  
 A. Borel: Pseudo-concavity for arithmetic groups

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A. Kosinski: Is the Hauptvermutung true for manifolds?  
 Shih Weishu: Characteristic classes in K-theory  
 R. Palais: The homotopy type of some infinite dimensional  
 manifolds

9. Mathematische Arbeitstagung 1965 (19. - 25. Juni)

M.F. Atiyah:      Elliptic operators on manifolds and generalized  
Lefschetz fixed point theorem I

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A. Douady:      An hour of counterexamples

M.F. Atiyah:      Elliptic operators on manifolds and generalized  
Lefschetz fixed point theorem II

S. Lang:      Division points on curves

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W. Klingenberg:      Closed geodesics

R. Thom:      Topological models for morphogenesis in biology

H. Hironaka:      Projectiveness criterions of Kleiman

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A. Grothendieck:      Riemann-Roch I

J.P. Serre:      Formal groups

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A. Grothendieck:      Riemann-Roch II

J. Milnor:      Projective class groups in topology

N. Kuiper:      Piecewise linear microbundles are bundles

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G. Harder:      Galois cohomology of semi-simple groups

I.G. Macdonald:      Spherical functions on p-adic groups

D. Epstein:      Duality theorems for abelian schemes

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A. Van de Ven:      Almost complex manifolds

D. Husemoller:      Cohomology theory

G. Segal:      Equivariant K-theory

R. Palais:      Symplectic manifolds (im Rahmen des Mathematischen  
Kolloquiums)

10. Mathematische Arbeitstagung 1966 (16. - 22. Juni)

M.F. Atiyah: Global aspects of elliptic operators

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H. Grauert: Non-archimedean analysis

J. Eells: Deformations of structures

M. Kervaire: Congruence subgroups after H. Bass

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J.P. Serre:  $\ell$ -adic Galois groups

L. Siebenmann: Applications of Wall's invariant

S. Smale: On the structure of diffeomorphisms

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M.F. Atiyah: Index theorem (I)

J. Tate:  $p$ -adic Galois representations

R. Bott: Vector fields and characteristic numbers

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M.F. Atiyah: Index theorem (II)

F. Hirzebruch: Exotic spheres and singularities

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S. Smale: Group constructions in the theory of diffeomorphisms

A. Borel: Rigidity of arithmetic groups

J. Milnor: Singularities of hypersurfaces

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J.F. Adams: Mahowald's result on the J-homomorphism

A. Van de Ven: Chern numbers of (almost-) complex surfaces

D. Sullivan: Manifolds with singularities .

11. Mathematische Arbeitstagung 1967 (16. - 22. Juni)

M.F. Atiyah: Hyperbolic equations and algebraic geometry

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J.P. Serre: Congruence subgroups and Coxeter hyperbolic groups

I. Šafarevič: Simple Lie algebras in finite characteristics

D.V. Anosov: Dynamical systems

---

N. Kuiper: Algebraic equations for combinatorial 8-manifolds

J.W.S. Cassels: Definite functions as sums of squares

M. Postnikov: K-theory for infinite complexes

---

I. Šafarevič: Algebraic analogue of uniformisation

D.V. Anosov: Asymptotic theory of some partial differential equations

M. Karoubi: Real and complex K-theory

---

H. Levine: Extending immersions of the circle in the plane

B. Venkov: Cohomology of some groups

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J.F. Adams: Complex cobordism

A. Brumer: p-adic L-functions

J.I. Manin: On rational surfaces

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R. Abraham: Generic properties of Hamiltonian systems

T. Matsumoto: Congruence subgroups and central group extensions

K. Jänich: Report on part of the Tulane Conference

12. Mathematische Arbeitstagung 1969 (13. - 20. Juni)

N. Kuiper: Stable homeomorphisms and the annulus conjecture,  
Kirby's results

---

P.A. Griffiths: Algebraic cycles

J.F. Adams: Quillen's work on cobordism and formal groups

R. Bott: Topological obstructions for foliations

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W.-C. Hsiang: Manifolds with fundamental group  $\mathbb{Z}^k$

W. Schmid: Langlands' conjecture

P. Deligne: Hodge theory of singular varieties

---

A. Borel: Picard-Lefschetz transformations and arithmetic groups

F. Hirzebruch:  $S^1$ -actions on manifolds

---

L. Siebenmann: Topological manifolds and related examples

J. Mather: Stratification of a generic mapping

D. Quillen: Homotopy theory of schemes

---

J. Tate:  $K_2$  of global fields

R. Thom: Topological linguistics

D. Gromoll: Periodic geodesics

R. Gardner: Geometric solution of the Cauchy Problem and a generalization of characteristics

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C.T.C. Wall: Integrable almost piecewise linear structures

J. Eells: Topology of Banach manifolds

G. Harder: A remark on Tamagawa numbers

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A. Bak: Quadratic modules and unitary K-theory

A. Weinstein: Symplectic manifolds

W.C. Hsiang: Falsity of the s-cobordism theorem for lower dimensional manifolds

13. Mathematische Arbeitstagung 1970 (12. - 19. Juni)

- C.T.C. Wall: A survey of free actions on spheres
- 
- S. Lang: Transcendental mappings  
 R. Kirby: Triangulation of manifolds  
 M. Kervaire: Projective class groups and class field theory
- 
- S. Hildebrandt: Boundary values in capillarities  
 D. Burghelea: Homotopy groups of spaces of diffeomorphisms  
 T. tom Dieck: Bordism of commuting involutions
- 
- S. Smale: Report on work of Moulton (celestial mechanics)  
 D.V. Anosov: New examples of smooth ergodic systems
- 
- R. Kiehl: Satz von Grauert (direkte Bilder von Garben)  
 T.A. Springer: Discrete series of finite Chevalley groups  
 E. Brieskorn: Singular elements in simple Lie groups
- 
- R. Takens: Partially hyperbolic fixed points  
 H. Bass: The Milnor ring of a field  
 J. Eells: Fredholm structures and Wiener integrals
- 
- J.-L. Verdier: Serre's duality theorem  
 H.V. Pittie: The representation ring of compact Lie groups  
 F. Waldhausen: Attempt on higher Withehead groups
- 
- R. Gardner: Rigidity and uniqueness of convex hypersurfaces  
 U. Koschorke: Pseudo-kompakte Teilmengen unendlich dimensionaler Mannigfaltigkeiten

14. Mathematische Arbeitstagung 1971 (10. - 14. Juni)

- M.F. Atiyah: The Riemann-Roch theorem for multihomogeneous varieties
- 
- W. Schmid: The singularities of Griffith's period mapping  
I.G. Macdonald: Affine root systems and theta-identities  
P. Deligne: The Weil conjecture for surfaces of degree 4 in  $P_3$
- 
- S. Lang: Frobenius automorphisms of modular function fields  
G. Lusztig: The Novikov higher signatures and families of elliptic operators  
F. Waldhausen: Applications of infinite simple homotopy types
- 
- G. Segal: Algebraic K-theory  
C.T.C. Wall: Quadratic forms  
H. Grauert: Deformation of singularities
- 
- D. Mumford: Degeneration of curves and non-archimedean uniformisation  
R. Bott: The classifying space of foliations
- 
- R. Thom: The four vertex theorem  
W.-Ch. Hsiang: A reduction theorem of differentiable actions  
J. Tits: Free groups in linear groups
- 
- M. Artin: Lüroth's theorem  
E. Bombieri: On pluricanonical models of algebraic surfaces  
A.I. Kostrikin: Deformation of Lie algebras
- 
- R. Langlands: On arithmetically equivalent representations  
J. Simons: Geometric invariants related to characteristic classes  
K. Shiohama: On the differentiable "pinching problem"

15. Mathematische Arbeitstagung 1972 (09. - 15. Juni)

- W. Schmid: Degeneration of algebraic manifolds
- 
- M. Karoubi: Hermitian K-theory
- T.A. Springer: Steinberg functions on a finite Lie algebra
- J. Cheeger: Manifolds with non-negative curvature
- 
- T. Petrie: Real algebraic actions on projective spaces
- D.I. Liebermann:  $n^{\text{th}}$  order de Rham theory
- E. Winkelnkemper: Open book decomposition of manifolds
- 
- A. Bak: Computation of surgery obstruction groups
- 
- A. Michenko: On infinite dimensional representations of discrete groups
- M.F. Atiyah: Invariants of odd dimensional manifolds
- S. Lichtenbaum: Values of zeta-functions at negative integers
- 
- F.J. Almgren: Geometric measure theory and elliptic variational problems
- M. Platonov: Conjectures of Artin and Kneser-Tits
- J.W. Robbin: Topological classification of linear endomorphisms of  $\mathbb{R}^n$
- K. Ueno: Classifications of algebraic varieties
- 
- M. Miranda: Hypersurfaces in  $\mathbb{R}^n$  of prescribed mean curvature
- M. Shub: Dynamical systems, filtrations and entropy
- J.A. Shaneson: Codimension -2 problems and homology equivalent manifolds

16. Mathematische Arbeitstagung 1974 (12. - 18. Juni)

- I.M. Singer:  $\eta$ -invariant and its relation to real quadratic fields
- 
- H. Bass: Russian progress on Serre's problem
- N.A'Campo: Resolution and deformation of plane curve singularities
- J.-P. Serre: Modular forms and Galois representations
- 
- J. Eells: Introduction to stochastic Riemannian geometry
- 
- R. Howe: The Weyl representation over finite fields
- G. Lusztig: Some discrete series representations of finite classical groups
- S. Kobayashi -  
S. Lang: Hyperbolic geometry and diophantine problems
- 
- D. Epstein: Foliations with compact leaves
- D. Quillen: Finite generation of K-groups in the function field case
- D. Zagier: Modular forms in one and two variables
- 
- G. Harder: Betti numbers of modular spaces of vector bundles
- W. Schmid: On the discrete series of semi-simple Lie groups
- E. Ruh: Equivariant pinching problems
- K. Ueno: Canonical bundle formula for certain fibre spaces and algebraic varieties of parabolic type
- 
- M.F. Atiyah: Asymptotic properties of eigenvalues in Riemannian geometry
- C.T.C. Wall: Norms of units in group rings
- S. Lang: Fermat curves and units in the modular function field

17. Mathematische Arbeitstagung 1975 (21. - 27. Juni)

M.F. Atiyah: Algebras of operators in Hilbert space and K-theory

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J. Moser: Isospectral deformations

G. Lusztig: Macdonald's conjecture on discrete series of finite Chevalley groups

B. Kostant: The  $\eta$ -function formula of Macdonald

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R. MacPherson: Gelfand's formula for the first Pontrjagin class

W. Ziller: Closed geodesics and homotopy symmetric spaces

J.-P. Serre: Lower bounds of discriminants of number fields

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T. tom Dieck: Burnside ring of a compact Lie group

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J.C. Jantzen: Modular representations of semi simple groups

W. Schmid: Blattner's conjecture on the discrete series of semi simple real Lie groups

A.N. Varchenko: Newton diagrams of singularities

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A.I. Kostrikin: Tannaka-Artin's conjecture on the multiplicative group of division algebras

B. Mazur: Rational points on modular curves

W. Casselman: The  $\pi$ -cohomology of representations of semi simple Lie groups

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A.N. Parshin: Residues and symbols

J.H.M. Steenbrink: Mixed Hodge structure on vanishing cycles

E. Calabi: Nearly flat triangulations of Riemannian manifolds

18. Mathematische Arbeitstagung 1977 (21. - 27. Juni)

- M.F. Atiyah: The classical geometry of Yang-Mills Fields (I)
- 
- J.-P. Serre: Function field analogue of  $SL_2(\mathbb{Z})$   
 H.W. Lenstra: Euclidean number fields  
 A. Tromba: Recent progress in Plateau's problem
- 
- M.F. Atiyah: The classical geometry of Yang-Mills fields (II)  
 M. Gromov: Hyperbolicity in dynamical systems  
 P. Griffiths: Application of residues to geometry
- 
- M. Berger: Wiedersehensmannigfaltigkeiten  
 (Conjecture of Blaschke)  
 A. Van de Ven: Inequalities for Chern numbers of surfaces  
 G. Zuckerman: Representations of semi simple lie groups
- 
- Ch. Thomas: Space form problems  
 R. Finn: Surface tension phenomena and geometry  
 J.-P. Bourguignon - C.L. Terng: Solution of the Calabi conjecture
- 
- C. Procesi: Ideals of determinants and Young diagrams  
 F. Sakai: Kondaira dimension of open complex manifolds  
 A. Andreotti: Domain of regularity of solutions of partial differential equations

19. Mathematische Arbeitstagung 1978 (16. - 23. Juni)

- M.F. Atiyah: Yang-Mills instantons and algebraic geometry
- 
- E. Calabi:  $SU(n)$ - and  $Sp(n)$ -manifolds
- H. Jacquet: From  $GL(2)$  to  $GL(3)$
- J.-P. Bourguignon: Differential-geometry of the Yang-Mills equation
- 
- J. Eells: Holomorphic and harmonic maps of surfaces
- J. Steenbrink: Non-rationality of the quartic threefold
- B. Gross: The Chowla-Selberg formula
- 
- B. Mazur: Rational points on elliptic curves and congruences of L-series
- D. Burghelea: Computation of homotopy groups of diffeomorphism groups of compact manifolds
- P. Schweitzer: Residues of real foliation singularities
- 
- T. Banchoff: The fourth dimension and computer animated geometry
- J. Milnor: Volume of hyperbolic manifolds
- 
- K. Ueno: Birational geometry of fibre spaces
- F. Adams: Finite H-spaces and algebras over the Steenrod Algebra
- N. Hitchin: Twistor spaces
- 
- A. Todorov: Surfaces with  $P_g = 1$  and  $K^2 = 1$
- P. Baum: K-homology and Riemann-Roch
- J. Brüning: Representations of compact Lie groups and elliptic operators
- 
- I. Piatetski-Shapiro: Automorphic forms on the metaplectic group
- F. Waldhausen: Algebraic K-theory of topological spaces

20. Mathematische Arbeitstagung 1979 (06. - 16. Juni)

J. Tits: On Leech's lattice and sporadic groups

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F. Adams: G. Segal's Burnside ring conjecture

F. Bogomolov: Converse Galois problems for some Chevalley groups

Wang Yuan: Goldbach problem

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D. Vogan: Size of representations

L. Berard-Bergery: A new example of Einstein manifolds

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V. Kac: Infinite dimensional Lie algebras

G. Mostow: New negatively curved surfaces

G. Lusztig: Representations of Hecke algebras

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B. Gross: Conjectures of Stark and Tate

Wu-chung Hsiang: Topological space form problems

E. Looijenga: Singularities and generalized root systems

M.F. Vigneras: Isospectral but not isometric Riemannian surfaces

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A.N. Parshin: Zeta functions and K-theory

Min-Oo: Curvature deformations relating to the Yang-Mills fields

G. Harder: Cohomology and values of L-functions

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A. Todorov: Moduli of Kählerian K3-surfaces

R.P. Langlands: On orbital integrals for real groups

J.-P. Serre: The monster game

21. Mathematische Arbeitstagung 1980 (13. - 19. Juni)

M.F. Atiyah: Vector Bundles on Riemann Surfaces

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A. Katok: Counting closed geodesics on surfaces  
 R. Bott: Equivariant Morse theory  
 K. Ribet: Mazur and Wiles (cyclotomic fields)

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A. Borel:  $L^2$ -cohomology of arithmetic groups  
 I. Bakelman: Topological methods in the theory of  
                 Monge-Ampère equations  
 H. King: Topology of real algebraic varieties

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J. Milnor: Groups of polynomial growth (Gromov's work)

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Y.-t. Siu: Andreotti-Fraenkel conjecture  
 M. Artin: Mori's work  
 B. Gross: L-series of elliptic curves

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F. Takens: Turbulence and strange attractors  
 W. Ziller: Periodic motions in Hamiltonian systems  
 P. Slodowy: Simple groups over  $\mathbb{C}((t))$  and simple-elliptic  
                 singularities

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S. Kudla: Geodesic cycles and the Weil representation  
 D. Epstein: A theorem of Thurston with applications to  
                 group actions and foliations  
 F. Adams: Recent work on homotopy theory

22. Mathematische Arbeitstagung 1981 (12. - 18. Juni)

M.F: Atiyah: Convexity and commuting Hamiltonians

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B. Mazur: Abelian extensions of  $\mathbb{Q}$

D. De Turck: "Manifold" of Ricci curvatures

B. Malgrange: Vanishing cohomology and Bernstein polynomials

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D. Mostow: Complex reflection groups

W. Fulton: Complex projective geometry (varieties of small codimension)

R. MacPherson: Intersection homology and nilpotent orbits

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J. Tate: Stark's conjecture about L-series at  $s = 0$

W. Meyer: Gromov's work on Betti numbers

K. Diederich: Complete Kähler domains

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W.D. Neumann: Thurston's work

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A. Derdzinski: Einstein metrics

S. Zucker:  $L^2$ -cohomology of arithmetic groups

A. Wiles: Explicit constructions of class fields

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J. Duistermaat: Asymptotics of spherical functions

M-F. Vigneras: Works of Waldspurger (automorphic forms of halfintegral weight)

R. Schultz: Topological similarity of representations

23. Mathematische Arbeitstagung 1982 (15. - 21. Juni)

M.F. Atiyah: The Yang-Mills equations and the structure  
of 4-manifolds

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D. Quillen: Determinants of  $\bar{\partial}$ -operators

J. Coates: Heights on elliptic curves

D. Vogan: Representations with cohomology

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R.S. Palais: Hamilton's work on positively curved 3-manifolds

R. Hartshorne: Space curves

M. Berger: Gromov's filling of Riemannian manifolds

---

J. Bernstein: Beilinson-Bernstein construction

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S.T. Yau: Manifolds with positive scalar curvature

S. Mori: Rational curves in 3-folds and applications

G. Harder: Tate conjecture for Hilbert modular surfaces

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L. Siebenmann: M. Freedman's work on 4-dimensional manifolds

S.J. Patterson: Limit sets of Kleinian groups

D. Epstein: On Chapter I of Thurston

---

S.S. Chern: Web geometry

B. Mazur:  $\mathbb{Z}_p$ -extensions and heights

F. Adams: Carissons prove of Segal's Burnside ring conjecture

24. Mathematische Arbeitstagung 1983 (16. - 22. Juni)

M.F. Atiyah: Instantons, monopoles and rational maps

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G. Faltings: The conjectures of Tate and Mordell I

B. Gross: Heights and L-series I (On the conjecture of Birch and Swinnerton-Dyer)

S.W. Donaldson: Stable holomorphic bundles and curvature

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C. Procesi: The solution of the Schottky problem  
(Characterization of Jacobian varieties)

D. Quillen: Cyclic homology and Hochschild-homology

N. Hingston: Equivariant Morse theory

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D. Zagier: Heights and L-series II (and applications to the class number problem)

D. McDuff: The Arnold conjecture on symplectic fixed points (after Conley and Zehnder)

G. Faltings: The conjectures of Tate and Mordell II  
(Moduli spaces of abelian varieties)

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J. Milnor: Monotonicity for the entropy of quadratic maps

E. Friedlander: On the conjectures of Lichtenbaum and Quillen (after Suslin and others)

D. Quillen: Arithmetic surfaces and analytic torsion

B. Moonen: Polar multiplicities and curvature integrals

---

D. Eisenbud: Special divisors on curves and Kodaira dimension of the moduli space (mostly after Mumford and Harris and Gieseker)

F. Kirwan: Cohomology of quotients in algebraic and symplectic geometry

W. Tutschke: Generalizations of the Cauchy-Kowalewski and Holmgren theorems to the case of generalized analytic functions

G. Wüstholz: Group varieties and transcendence

25. Mathematische Arbeitstagung 1984 (15. - 22. Juni)

- J. Tits: Groups and group functors attached to Kac-Moody data
- 
- M. Atiyah: The eigenvalues of the Dirac operator
- A. Connes: K-theory, cyclic cohomology and operator algebras
- G. Segal: Loop groups
- 
- G. Harder: Special values of Hecke L-functions and abelian integrals
- H. Wente: A counterexample in 3-space to a conjecture of H. Hopf
- G. Faltings: Compactification of  $A_g/\mathbb{Z}$
- C.T.C. Wall: Geometric structures and algebraic surfaces
- 
- J. Harris: Recent work on Hodge structures
- 
- Y.T. Siu: Some recent results in complex manifold theory related to vanishing theorems for the semipositive case
- W. Schmid: Recent progress in representation theory
- W. Ballmann: Manifolds of non-positive curvature
- B. Mazur -  
Ch. Soulé: Conjectures of Beilinson on L-functions and K-theory
- 
- H.-O. Peitgen: Morphology of Julia sets
- S.S. Chern: Some applications of the method of moving frames
- S. Lang: Vojta's conjecture on heights and Green's function
- S. Donaldson: 4-manifolds with indefinite intersection form
- 
- D. Zagier: Modular points, modular curves, modular surfaces and modular forms
- G. van der Geer: Schottky's problem
- R. Bryant:  $G_2$  and Spin(7)-holonomy
- S. Wolpert: Homology of Teichmüller spaces
- 
- J.-P. Serre:  $\ell$ -adic representations
- M.F. Atiyah: On Manin's manuscript "New dimensions in geometry"

Max-Planck-Institut  
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5300 Bonn 1

**Programm der Mathematischen Arbeitstagung 1986 (I)**  
=====

**Freitag, den 13.6.1986**

- 16.00 - 17.00 Uhr      M.F. ATIYAH: The logarithm of the Dedekind  $\eta$ -function

**Samstag, den 14.6.1986**

- 10.00 - 11.00 Uhr      CH. SOULÉ: Higher dimensional Arakelov theory
- 11.45 - 12.45 Uhr      M. KRECK: 7-dimensional Einstein manifolds with  $SU(3) \times SU(2) \times U(1)$  - symmetry
- 17.00 - 18.00 Uhr      K. FUKAYA: Collapsing and eigenvalues

**Sonntag, den 15.6.1986**

- 9.45 - 10.00 Uhr      Festlegung der nächsten Vorträge
- 10.00 - 11.00 Uhr      A. FLOER: Holomorphic curves and fixed points of symplectic maps
- 11.45 - 12.45 Uhr      P. KRONHEIMER: Gravitational instantons and Kleinian singularities
- 17.00 - 18.00 Uhr      G. FALTINGS: Hodge-Tate structures

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstraße 10, statt.

Erfrischungspausen mit Tee: Samstag und Sonntag 11.00 - 11.30 Uhr vor dem Großen Hörsaal und ab 15.00 Uhr im Max-Planck-Institut.

Post, die nicht ans MPI adressiert ist, liegt während der Teepausen vor dem Großen Hörsaal aus. Alle Teilnehmer mögen sich bitte in die Teilnehmerlisten eintragen. Teilnehmerlisten und Informationen liegen vor dem Großen Hörsaal aus.

Für Diskussionen stehen das MPI, der Diskussionsraum Beringstraße 1 und der Sitzungssaal (Raum 4) Beringstraße 4 zur Verfügung.  
Tischtennis im Keller des Hauses Beringstraße 4.

Den Tagungsbeitrag bitte an Frau Karge bezahlen (Samstag und Sonntag 13.00 - 17.00 Uhr im Empfang des MPI).

Alle Tagungsteilnehmer mit ihren Damen oder Herren sind herzlich zum Empfang des Rektors eingeladen. Zeit: Freitag, 13.6.1986, 20.00 Uhr. Ort: Festsaal der Universität, Hauptgebäude; Eingang von der Straße "Am Hof" durch das Tor gegenüber Buchhandlung Röhrscheid.

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**Programm der Mathematischen Arbeitstagung 1986 (II)**  
=====

**Montag, den 16.6.1986**

10.30 - 11.30 Uhr      M. KERVAIRE: Jones's knot polynomials

13.00 Uhr      Schiffsausflug nach Bad Honningen. Abfahrt  
pünktlich um 13.00 Uhr mit Motorschiff  
"Carmen Silva" am Alten Zoll. Rückkehr  
ca. 19.30 Uhr.

**Dienstag, den 17.6.1986**

10.00 - 10.15 Uhr      Festlegung der nächsten Vorträge

10.15 - 11.15 Uhr      K. RIBET: Modular forms,  $\ell$ -adic representations  
and Fermat's last theorem

11.45 - 12.45 Uhr      M.F. ATIYAH: Donaldson invariants for  
4-manifolds

15.30 - 16.30 Uhr      F.A. BOGOMOLOV: Rationality problems,  
(informal talk) stable cohomology

17.00 - 18.00 Uhr      U. PINKALL: New minimal surfaces in  $S^3$

**Mittwoch, den 18.6.1986**

10.15 - 11.15 Uhr      H. KNÖRRER: Fermi curves and density of states

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstr. 10, statt.  
Erfrischungspausen mit Tee: Dienstag 11.00 - 11.30 Uhr und 16.30 -  
17.00 Uhr vor dem Großen Hörsaal.

Post, die nicht ans MPI adressiert ist, liegt während der Teepausen  
vor dem Großen Hörsaal aus.

Alle Tagungsteilnehmer mögen sich bitte in die Teilnehmerlisten  
eintragen. Teilnehmerlisten und Informationen liegen vor dem Großen  
Hörsaal aus.

Den Tagungsbeitrag bitte an Frau Karge bezahlen (Dienstag von 13.00  
- 17.00 Uhr im Empfang des MPI).

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**Programm der Mathematischen Arbeitstagung 1986 (III)**

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**Mittwoch, den 18.6.1986**

16.30 - 17.30 Uhr      G. WÜSTHOLZ: Baker's method and effectivity

17.45 - 18.45 Uhr      R. LEE: Finite group actions on the complex projective plane

**Donnerstag, den 19.6.1986**

10.15 - 11.15 Uhr      J. BRÜNING:  $L^2$ -index theorems for regular singular operators

12.00 - 13.00 Uhr      H. ESNAULT: Characteristic classes of flat bundles

17.00 - 18.00 Uhr      F. HIRZEBRUCH: 3-folds with  $c_1 = 0$

**Freitag, den 20.6.1986**

12.30 - 13.30 Uhr      M. REID: Progress in 3-folds  
(Sondervortrag)

16.30 - 17.30 Uhr      H. KURKE: Modulräume von Vektor-Bündeln  
(Kolloquiumsvortrag)

Der Sondervortrag findet im Seminarraum des MPI für Mathematik statt.  
Der Kolloquiumsvortrag findet im "Kleinen Hörsaal", Wegelerstr. 10 statt.  
Alle anderen Vorträge finden im "Großen Hörsaal" statt.

Post, die nicht ans MPI adressiert ist, liegt während der Teepausen aus.

Erfrischungspausen mit Tee: Mittwoch, 16.00-16.30 vor dem Großen Hörsaal.  
Donnerstag 11.15 - 11.45 vor dem Großen Hörsaal, ab 15.00 Uhr im MPI.  
Freitag, 16.00 - 16.30 Uhr vor dem Großen Hörsaal.

Informationen liegen vor dem Großen Hörsaal aus.

Den Tagungsbeitrag bitte an Frau Karge bezahlen (Mittwoch und Donnerstag von 13.00 - 17.00 in Raum 20-4 des MPI).

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**Programm der Mathematischen Arbeitstagung 1987 (I)**

---

**Freitag, den 12.6.1987**

16.30 - 17.30 Uhr      M.F. ATIYAH: Invariants of 3- and 4-dimensional manifolds

**Samstag, den 13.6.1987**

10.00 - 11.00 Uhr      J. TITS: Monster and moonshine

11.45 - 12.45 Uhr      N. SMALE: Bridge principle for minimal submanifolds

17.00 - 18.00 Uhr      A. FLOER: Instantons and homology 3-spheres

**Sonntag, den 14.6.1987**

10.00 - 10.15 Uhr      Festlegung der nächsten Vorträge

10.15 - 11.15 Uhr      F. HIRZEBRUCH: Introduction to elliptic genera

12.00 - 13.00 Uhr      L. ILLUSIE: Frobenius and the degeneration of the Hodge spectral sequence

17.00 - 18.00 Uhr      Th. FRIEDRICH: Riemannian manifolds with small eigenvalue of the Dirac operator

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstraße 10, statt.

Erfrischungspausen mit Tee: Samstag 11.00 - 11.45 Uhr und 16.00 - 17.00 Uhr, Sonntag 11.15 - 12.00 Uhr und 16.00 - 17.00 Uhr, vor dem Großen Hörsaal.

Post liegt während der Teepausen aus. Alle Teilnehmer mögen sich bitte in die Teilnehmerlisten eintragen. Teilnehmerlisten und Informationen liegen vor dem Großen Hörsaal aus.

Für Diskussionen stehen das Haus Wegelerstraße 10 und das Max-Planck-Institut zur Verfügung.

Den Tagungsbeitrag bitte während der Teepausen an Herrn Winter bezahlen.

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**Programm der Mathematischen Arbeitstagung 1987 (II)**

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**Montag, den 15.6.1987**

- 9.45 - 10.45 Uhr D. EPSTEIN: Finite state automata, groups and hyperbolic geometry
- 13.00 Uhr Schiffsausflug nach Bad Breisig. Abfahrt pünktlich um 13.00 Uhr mit Motorschiff "Carmen Silva", Landebrücke der Personenschiffahrt "Siebengebirge" (nahe Alter Zoll). Rückkehr ca. 19.30 Uhr

**Dienstag, den 16.6.1987**

- 10.00 - 10.15 Uhr Festlegung der nächsten Vorträge
- 10.15 - 11.15 Uhr A. WILES: On the Tate-Safarevic group
- 12.00 - 13.00 Uhr D. BURGHELEA: Free loop spaces and automorphisms of manifolds
- 17.00 - 18.00 Uhr D. ZAGIER: Elliptic curves and Fermat's last theorem

**Mittwoch, den 17.6.1987**

- 10.00 - 11.00 Uhr Y. MIYAOKA: The structure of algebraic threefolds

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstraße 10, statt.  
Erfrischungspausen mit Tee: Dienstag, 11.15 - 12.00 Uhr vor dem Großen Hörsaal, 15.30 - 16.30 Uhr im Max-Planck-Institut.

Post liegt während der Teepausen vor dem Großen Hörsaal aus.

Alle Tagungsteilnehmer mögen sich bitte in die Teilnehmerlisten eintragen. Teilnehmerlisten und Informationen liegen vor dem Großen Hörsaal aus.

Den Tagungsbeitrag bitte während der Teepausen an Herrn Winter bezahlen.

Alle Tagungsteilnehmer mit ihren Damen oder Herren sind herzlich zum Empfang des Rektors eingeladen. Zeit: Dienstag, 16.6.1987, 20.00 Uhr. Ort: Festsaal der Universität, Hauptgebäude; Eingang von der Straße "Am Hof" durch das Tor gegenüber Buchhandlung Röhrscheid.

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**Programm der Mathematischen Arbeitstagung 1987 (III)**

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**Mittwoch, den 17.6.1987**

11.45 - 12.45 Uhr M. SAITO: Mixed Hodge modules

17.00 - 18.00 Uhr St. RALLIS: L-functions and oscillator representations

**Donnerstag, den 18.6.1987**

10.00 - 11.00 Uhr D. GROMOLL: Lower curvature bounds and topological finiteness

11.45 - 12.45 Uhr K. UHLENBECK: Moment maps in infinite dimensions

17.00 - 18.00 Uhr Th. ZINK: Points on Shimura varieties and Dieudonné modules

**Freitag, den 19.6.1987**

16.30 - 17.30 Uhr B. MEEKS: The geometry of constant mean curvature surfaces and of minimal surfaces  
(Kolloquiumsvortrag)

Der Kolloquiumsvortrag findet im "Kleinen Hörsaal", Wegelerstr. 10, statt.  
Alle anderen Vorträge finden im "Großen Hörsaal" statt.

Post liegt während der Teepausen aus.

Erfrischungspausen mit Tee: Mittwoch und Donnerstag, 11.00 - 11.45 Uhr und 16.00 - 17.00 Uhr vor dem Großen Hörsaal.

Informationen liegen vor dem Großen Hörsaal aus.

Den Tagungsbeitrag bitte während der Teepausen an Herrn Winter bezahlen.

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**Programm der Mathematischen Arbeitstagung 1988 (I)**

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**Donnerstag, den 16.6.1988**

16.00 - 17.00 Uhr      M.F. ATIYAH: Topological quantum field theory

**Freitag, den 17.6.1988**

10.15 - 11.15 Uhr      A. SUSLIN: K-theory of fields

12.00 - 13.00 Uhr      G. MARGULIS: Minima of indefinite quadratic forms

17.00 - 18.00 Uhr      A. PARSHIN: Inequalities for algebraic surfaces and connections with number theory

**Samstag, den 18.6.1988**

10.00 - 10.15 Uhr      Festlegung der nächsten Vorträge

10.15 - 11.15 Uhr      J. BISMUT: Quillen metrics and degenerating Riemann surfaces

12.00 - 13.00 Uhr      K. RUBIN: Finiteness of the Shafarevich group (Kolyvagin's work)

17.00 - 18.00 Uhr      R. THOM: Animal organization as a stratified space

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstraße 10, statt.  
Erfrischungspausen mit Tee: Freitag und Samstag 11.15 - 12.00 Uhr und 16.00 - 17.00 Uhr vor dem Großen Hörsaal.

Teilnehmerlisten und Informationen liegen vor dem Großen Hörsaal aus.  
Alle Teilnehmer mögen sich bitte in die Teilnehmerlisten eintragen.

Post liegt während der Teepausen aus.

Den Tagungsbeitrag bitte während der Teepausen vor dem Großen Hörsaal bezahlen.

Alle Tagungsteilnehmer mit ihren Damen oder Herren sind herzlich zum Empfang des Rektors eingeladen. Zeit: Donnerstag, den 16.6., 20.00 Uhr. Ort: Festsaal der Universität, Hauptgebäude; Eingang von der Straße "Am Hof" durch das Tor gegenüber Buchhandlung Röhrscheid.

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**Programm der Mathematischen Arbeitstagung (II)**

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Sonntag, den 19.6.1988

10.15 - 11.15 Uhr      W. BALLMANN: Dirichlet problem at  $\infty$

12.00 - 13.00 Uhr      D. KOTSCHICK: Differentiable classification of algebraic surfaces

17.00 - 18.00 Uhr      J. FRANKE: Chow categories

Montag, den 20.6.1988

10.30 - 10.45 Uhr      Festlegung der nächsten Vorträge

10.45 - 11.45 Uhr      G. WÜSTHOLZ: Tate conjecture by transcendence theory

13.00 Uhr      Schiffsausflug nach Andernach. Abfahrt um 13.00 mit Motorschiff "Carmen Sylva", Ablegestelle Alte Zoll. Rückkehr ca. 20.00 Uhr.

Dienstag, den 21.6.1988

10.15 - 11.15 Uhr      Y. NAMIKAWA: Conformal field theory on Riemann surfaces

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstraße 10, statt.  
Erfrischungspausen mit Tee: Sonntag und Dienstag, 11.15 - 12.00 Uhr und 16.00 - 17.00 Uhr vor dem Großen Hörsaal.

Teilnehmerlisten und Informationen liegen vor dem Großen Hörsaal aus.  
Alle Teilnehmer mögen sich bitte in die Teilnehmerlisten eintragen.

Post liegt während der Teepausen aus.

Den Tagungsbeitrag bitte während der Teepausen vor dem Großen Hörsaal bezahlen.

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**Programm der Mathematischen Arbeitstagung 1988 (III)**

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**Dienstag, den 21.6.1988**

12.00 - 13.00 Uhr      J.-M. FONTAINE: Semi-stable Galois representations

17.00 - 18.00 Uhr      J. LEITERER: Extension of CR cohomology. Deformation  
of vector bundles on pseudoconvex manifolds with  
2 convex holes

**Mittwoch, den 22.6.1988**

10.15 - 11.15 Uhr      R. HAIN: A trilogarithm

12.00 - 13.00 Uhr      K. GROVE: Bounding homotopy types by geometry

15.00 - 16.00 Uhr      J. HUBBARD: Iteration of cubic polynomials

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstraße 10, statt.

Erfrischungspausen mit Tee: Dienstag, 16.00 - 17.00 Uhr vor dem Großen  
Hörsaal; Mittwoch, 11.15 - 12.00 Uhr vor dem Großen Hörsaal.

Informationen liegen vor dem Großen Hörsaal aus.

Post liegt während der Teepausen aus.

Den Tagungsbeitrag bitte während der Teepausen vor dem Großen Hörsaal  
bezahlen.

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Programm der Mathematischen Arbeitstagung 1990 (I)

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Samstag, den 23.6.1990

16.00 - 17.00 Uhr M.F. ATIYAH: Topology and quantum field theory

Sonntag, den 24.6.1990 TAG DER KOMPLEXEN ANALYSIS

10.15 - 11.15 Uhr H. GRAUERT: Extension of quotient sheaves  
to edges

12.00 - 13.00 Uhr T. OHSAWA: Geometric and analytic aspects of  
the  $L^2$  theory in complex analysis

17.00 - 18.00 Uhr S.K. DONALDSON: Differential topology and  
complex variables

Montag, den 25.6.1990

10.00 - 10.15 Uhr Festlegung der nächsten Vorträge

10.15 - 11.15 Uhr N. ELKIES: On Mordell-Weil lattices

12.00 - 13.00 Uhr I. CHEREDNIK: Kac-Moody algebras and conformal  
field theory

17.00 - 18.00 Uhr H. LENSTRA: On the 9<sup>th</sup> Fermat number

Dienstag, den 26.6.1990

10.15 - 11.15 Uhr CH. SOULÉ: Arithmetic Riemann-Roch theorems

Die Vorträge finden alle im Großen Hörsaal, Wegelerstraße 10, statt.  
Erfrischungspausen mit Tee: Sonntag und Montag, 11.15-12.00 Uhr und  
16.00-17.00 Uhr vor dem Großen Hörsaal.

Teilnehmerlisten und Informationen liegen vor dem Großen Hörsaal aus.

Alle Teilnehmer werden gebeten, sich in die Listen einzutragen.

Post liegt während der Teepausen aus.

Den Tagungsbeitrag bitte in den Teepausen vor dem Großen Hörsaal bezahlen.

Alle Tagungsteilnehmer mit ihren Damen oder Herren sind herzlich zum

Empfang des Rektors eingeladen. Zeit: Montag, 25.6., 20.00 Uhr. Ort:

Festsaal der Universität (Hauptgebäude); Eingang von der Straße "Am Hof"  
durch das Tor gegenüber Buchhandlung Röhrscheid.

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**Programm der Mathematischen Arbeitstagung 1990 (II)**

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**Dienstag, den 26.6.1990**

- 13.00 Uhr Schiffsausflug nach Linz. Abfahrt um 13.00 Uhr mit Motorschiff "Carmen Sylva", Ablegestelle Alter Zoll.  
Rückkehr ca. 19.30 Uhr.

**Mittwoch, den 27.6.1990**

- 10.15 - 11.15 Uhr M. ZAIDENBERG: Acyclic affine curves and surfaces.  
Exotic algebraic structures on  $\mathbb{C}^n$
- 12.00 - 13.00 Uhr K. RUBIN: Euler systems and applications to elliptic curves and ideal class groups
- 17.00 - 18.00 Uhr V. POENARU: New infinite processes in 3-dimensional topology

**Donnerstag, den 28.6.1990**

- 10.15 - 11.15 Uhr U. HAMENSTÄDT: Rigidity of geodesic flows (on a conjecture of Katok)
- 12.00 - 13.00 Uhr M. KRECK: Positive scalar curvature,  $P_2(H)$ , and elliptic homology
- 17.00 - 18.00 Uhr H. BAUM: Killing spinors on Riemannian manifolds

**Freitag, den 29.6.1990**

- 10.15 - 11.15 Uhr A. JUHL: Selberg  $\zeta$ -functions for locally symmetric spaces of higher rank
- 12.00 - 13.00 Uhr G. WÜSTHOLZ: Diophantine approximation (report on work of Vojta, Faltings and Bombieri)
- 16.30 - 17.30 Uhr S. LANG: The non-Mordellic subset of an algebraic variety (Kolloquium)

Die Vorträge finden alle im Großen Hörsaal statt. Erfrischungspausen mit Tee:  
Mittwoch, Donnerstag und Freitag 11.15 - 12.00 Uhr, Mittwoch und Donnerstag  
16.00 - 17.00 Uhr, Freitag 16.00 - 16.30 Uhr jeweils vor dem Großen Hörsaal.  
Teilnehmerlisten und Informationen liegen vor dem Großen Hörsaal aus. Post  
liegt während der Teepausen aus. Den Tagungsbeitrag bitte während der Teepausen  
vor dem Großen Hörsaal bezahlen.

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**Programm der Mathematischen Arbeitstagung 1991 (I)**

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**Freitag, den 14.6.1991**

- 16.00 - 17.00 Uhr      S.K. DONALDSON (Oxford)  
Glueing problems in Yang-Mills theory

**Samstag, den 15.6.1991**

- 10.15 - 11.15 Uhr      T. SHIODA (Rikkyo U., z.Zt. MPI)  
Mordell-Weil lattices: theory and applications
- 12.00 - 13.00 Uhr      D. ZAGIER (MPI Bonn und U. Utrecht)  
Polylogarithms
- 17.00 - 18.00 Uhr      B. OLIVER (Aarhus)  
Maps between classifying spaces of compact Lie groups

**Sonntag, den 16.6.1991**

- 10.15 - 11.15 Uhr      Yu.I. MANIN (Steklov Moskau, z.Zt. MPI)  
DeRham-complexes in non-commutative geometry
- 12.00 - 13.00 Uhr      G. WÜSTHOLZ (ETH Zürich)  
Faltings's proof of one of Lang's conjectures  
(rational points on subvarieties of Abelian varieties)
- 16.15 - 16.45 Uhr      H. HIRONAKA (Harvard)  
Miscellanea Mathematica
- 17.00 - 18.00 Uhr      J-P. SERRE (Collège de France Paris)  
Galois cohomology: recent results and open questions

**Montag, den 17.6.1991**

- 10.00 - 10.15 Uhr      Festlegung der restlichen Vorträge
- 10.15 - 11.15 Uhr      M. KONTSEVICH (Acad. Sci. Moskau, z.Zt. MPI)  
Intersection theory on the moduli space of curves  
and the matrix Airy function
- 13.00 Uhr      Schiffsfahrt nach Andernach. Abfahrt um 13.00 Uhr  
mit Motorschiff "Carmen Sylva", Ablegestelle  
Alter Zoll. Rückkehr ca. 20.00 Uhr

Max-Planck-Institut  
für Mathematik  
Gottfried-Claren-Str. 26  
5300 Bonn 3

und

Mathematisches Institut  
der Universität Bonn  
Wegelerstraße 10  
5300 Bonn 1

**Programm der Mathematischen Arbeitstagung 1991 (II)**

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**Mittwoch, den 19.6.1991**

- |                   |   |
|-------------------|---|
| 10.15 - 11.15 Uhr | H. TSUJI (Tokyo Metropolitan U., z.Zt. MPI)<br>Report on Mori Theory                      |
| 12.00 - 13.00 Uhr | S. KLAINERMAN (Princeton U., z.Zt. SFB 256)<br>On non-linear stability of Minkowski space |
| 17.00 - 18.00 Uhr | C. BÄR (Bonn)<br>On Killing spinors and exceptional holonomy groups                       |

**Donnerstag, den 20.6.1991**

- |                   |  |
|-------------------|--|
| 10.15 - 11.15 Uhr | R. PINK (Bonn)<br>Deligne's conjecture on the Lefschetz trace formula<br>in positive characteristic is now a theorem                 |
| 12.00 - 13.00 Uhr | W. MÜLLER (Karl-Weierstraß-Institut, z.Zt. MPI)<br>Analytic Torsion for non-unitary representations<br>and Chern-Simons gauge theory |
| 17.00 - 18.00 Uhr | F. OORT (Utrecht)<br>Newton polygons and abelian varieties   |

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstraße 10, statt.

Erfrischungspausen mit Tee: Mittwoch und Donnerstag, 11.15 - 12.00 Uhr  
und 16.15 - 17.00 Uhr vor dem Großen Hörsaal.

Post liegt während der Teepausen aus.

Informationen liegen vor dem Großen Hörsaal aus.

Den Tagungsbeitrag bitte während der Teepausen vor dem Großen Hörsaal  
bezahlen.

Dienstag, den 18.6.1991

10.15 - 11.15 Uhr

M. WODZICKI (UC Berkeley)

Excision in K-theory and proof of the Karoubi conjecture

12.00 - 13.00 Uhr

R. MACPHERSON (M.I.T.)

Lefschetz numbers of Hecke correspondences

17.00 - 18.00 Uhr

S. LANG (Yale University, z.Zt. MPI)

Degeneration of Riemann surfaces and  
Jorgenson's proof of a conjecture of Deligne

Die Vorträge finden alle im "Großen Hörsaal", Wegelerstraße 10, statt.

Erfrischungspausen mit Tee: Samstag, Sonntag und Dienstag 11.15 - 12.00 Uhr,  
Samstag und Dienstag 16.15-17.00 Uhr, Sonntag 15.30 - 16.15 Uhr, jeweils  
vor dem Großen Hörsaal.

Teilnehmerlisten und Informationen liegen vor dem Großen Hörsaal aus.  
Alle Teilnehmer mögen sich bitte in die Teilnehmerlisten eintragen.

Post liegt während der Teepausen aus.

Den Tagungsbeitrag bitte während der Teepausen vor dem Großen Hörsaal bezahlen

Alle Tagungsteilnehmer mit ihren Damen oder Herren sind herzlich zum  
Empfang des Rektors eingeladen. Zeit: Freitag, den 14.6., 20.00 Uhr.  
Ort: Festsaal der Universität, Hauptgebäude; Eingang von der Straße  
"Am Hof" durch das Tor gegenüber Buchhandlung Bouvier.

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**Program of the Mathematische Arbeitstagung 1993 (I)**

**Wednesday, June 9, 1993**

- 3:30 – 4:15 p.m.      Opening and first program discussion
- 5:00 – 6:00 p.m.      YU. I. MANIN (Max-Planck-Institut für Mathematik)  
Report on Mirror Symmetries
- 8:00 – 10:00 p.m.      Chamber Music Concert: Knopp-Melançon Duo  
Festsaal der Universität, Hauptgebäude (entrance from  
“Am Hof” street across from Bouvier bookstore)

**Thursday, June 10, 1993**

- 10:15 – 11:15 a.m.      M. KONTSEVICH:  $A_\infty$ -algebras in mirror symmetry
- 12:00 – 1:00 p.m.      W. NAHM: Conformal field theories in 2 dimensions  
and  $\mathcal{W}$ -algebras
- 5:00 – 6:00 p.m.      D. HARBATER: Proof of Abhyankar’s conjecture  
on  $\pi_1$  of curves in characteristic  $p$

**Friday, June 11, 1993**

- 9:50 – 10:10 a.m.      Program discussion for the Saturday and Sunday lectures
- 10:15 – 11:15 a.m.      N.-P. SKORUPPA: New methods in modular forms  
and Jacobi forms
- 1:00 – 8:00 p.m.      Boat trip to Bad Breisig  
Departure with “Carmen Sylva” near the Kennedy Bridge

All lectures will take place in the “Großer Hörsaal”, Wegelerstraße 10.

There will be *tea breaks* on Wednesday from 4:15 to 5 p.m. and on other days (except Friday) from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 20 marks.

Lists of participants and other information will be available at the entrance of the lecture room.  
All participants are requested to put their name on the list!

All Arbeitstagung participants and those accompanying them are warmly invited to the chamber music program on Wednesday evening.

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**Program of the Mathematische Arbeitstagung 1993 (II)**

**Saturday, June 12, 1993**

10:15 – 11:15 a.m.	M. WODZICKI: Algebraic K-theory of trace class operators
12:00 – 13:00 p.m.	M. RAPOPORT: p-adic period domains
5:00 – 6:00 p.m.	T. ODA: Moduli spaces of curves with pro-nilpotent level structure

**Sunday, June 13, 1993**

10:00 – 10:15 a.m.	Program discussion for the Monday and Tuesday lectures
10:15 – 11:15 a.m.	G. WÜSTHOLZ: Diophantine approximation in $P^n$
12:00 – 13:00 p.m.	B. HUNT: Algebraic-geometric characterization of locally symmetric spaces
5:00 – 6:00 p.m.	M. YOSHIDA: Intersection theory for twisted homology and hypergeometric functions

All lectures will take place in the “Großer Hörsaal”, Wegelerstraße 10.

There are daily *tea breaks* from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 20 marks.

Lists of participants and other information will be available at the entrance of the lecture room.  
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### Program of the Mathematische Arbeitstagung 1993 (III)

#### Monday, June 14, 1993

10:15 – 11:15 a.m.	J.-M. KANTOR: Counting lattice points in convex polyhedra
12:00 – 13:00 p.m.	B. LEEB: Metrics of non-positive curvature on 3-manifolds
3:00 – 4:00 p.m.	A. SCHWARZ: New geometric and algebraic structures in string theory
5:00 – 6:00 p.m.	H. ESNAULT: Higher Kodaira-Spencer maps
8:00 – 11 (?) p.m.	Rector's Party Festsaal der Universität, Hauptgebäude (entrance from “Am Hof” street across from Bouvier bookstore)

#### Tuesday, June 15, 1993

10:15 – 11:15 a.m.	K. KÖHLER: Analytic torsion and higher direct images in arithmetic K-theory
12:00 – 13:00 p.m.	Y. RUAN: Symplectic Donaldson type invariants
5:00 – 6:00 p.m.	F. OORT: Subvarieties of moduli spaces

All lectures will take place in the “Großer Hörsaal”, Wegelerstraße 10.

There are daily *tea breaks* from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 20 marks.

Lists of participants and other information will be available at the entrance of the lecture room.  
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All Arbeitstagung participants and those accompanying them are warmly invited to attend the Rector's party on Monday evening.

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### Program of the Mathematische Arbeitstagung 1995 (I)

#### Wednesday, June 14, 1995

- 3:30 – 4:15 p.m.      Opening and first program discussion
- 5:00 – 6:00 p.m.      M. KONTSEVICH (Berkeley and IHES)  
The moduli space of all Calabi-Yau threefolds
- 8:00 – 9:50 p.m.      Chamber Music Concert: Knopp-Melançon Duo  
Aula der Universität, Hauptgebäude (entrance from  
“Am Hof” street across from Bouvier bookstore)

#### Thursday, June 15, 1995

- 10:15 – 11:15 a.m.      F. POP (Heidelberg)  
Characterization of fields by their Galois groups
- 12:00 – 1:00 p.m.      M. SMIRNOV (Princeton U.)  
Radon transform and the 4th Hilbert problem
- 5:00 – 6:00 p.m.      T. MROWKA (Harvard)  
Seiberg-Witten invariants and 4-manifolds, I
- 8:00 – 11 (?) p.m.      Rector's Party  
Festsaal der Universität, Hauptgebäude (entrance from  
“Am Hof” street across from Bouvier bookstore)

#### Friday, June 16, 1995

- 10:00 – 10:20 a.m.      Program discussion for the Saturday and Sunday lectures
- 10:30 – 11:30 a.m.      J. MORGAN (Columbia U.)  
Seiberg-Witten invariants and 4-manifolds, II
- 1:00 – 8:00 p.m.      Boat trip to Unkel  
Departure with “Carmen Sylva” near the Kennedy Bridge

All lectures will take place in the “Großer Hörsaal,” Wegelerstraße 10.

There will be *tea breaks* on Wednesday from 4:15 to 5 p.m. and on other days (except Friday) from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 20 marks.

Lists of participants and other information will be available at the entrance of the lecture room  
All participants are requested to put their name on the list!

All Arbeitstagung participants and those accompanying them are warmly invited to the chamber music program on Wednesday evening and to the party on Thursday.

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### Program of the Mathematische Arbeitstagung 1995 (II)

#### Saturday, June 17, 1995

10:15 – 11:15 a.m.	R. BORCHERDS (Berkeley) Product expansions of automorphic forms
12:00 – 13:00 p.m.	F. OORT (Utrecht) Resolution of singularities by alterations (a report on work of A.J. de Jong)
5:00 – 6:00 p.m.	A. BUIUM (Romanian Acad.Sci. Bucarest) $p$ -adic jets, Manin maps and related questions

#### Sunday, June 18, 1995

10:00 – 10:15 a.m.	Program discussion for the Monday and Tuesday lectures
10:15 – 11:15 a.m.	C-L. CHAI (U. of Pennsylvania) Density of ordinary abelian varieties in the moduli space
12:00 – 13:00 p.m.	R. TAYLOR (Oxford) Galois representations and modular forms, I
5:00 – 6:00 p.m.	E. LOOIJENGA (Utrecht) On the tautological ring of $M_g$

All lectures will take place in the "Großer Hörsaal," Wegelerstraße 10.

There are daily *tea breaks* from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 20 marks.

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**Program of the Mathematische Arbeitstagung 1995 (III)**

**Monday, June 19, 1995**

- |                    |   |
|--------------------|---|
| 10:15 – 11:15 a.m. | G. FALTINGS (MPI)<br>Tate cycles                                  |
| 12:00 – 13:00 p.m. | R. PINK (Mannheim)<br>Mumford-Tate conjecture                     |
| 5:00 – 6:00 p.m.   | B. LEEB (U. Bonn)<br>Rigidity of spaces of non-positive curvature |

**Tuesday, June 20, 1995**

- |                    |  |
|--------------------|--|
| 10:15 – 11:15 a.m. | U. BUNKE (Berlin)<br>Spectral theory on symmetric spaces:<br>group cohomology and $\zeta$ -functions |
| 12:00 – 13:00 p.m. | I. HAMBLETON (McMaster U.)<br>On topological similarities of representations<br>of finite groups     |
| 5:00 – 6:00 p.m.   | R. TAYLOR (Oxford)<br>Galois representations and modular forms, II                                   |

All lectures will take place in the "Großer Hörsaal," Wegelerstraße 10.

There are daily *tea breaks* from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 20 marks.

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### Program of the Mathematische Arbeitstagung 1997 (I)

#### Friday, June 20, 1997

3:30 – 4:15 p.m.	Opening and first program discussion
5:00 – 6:00 p.m.	S. Donaldson (Oxford) Kähler geometry, geometric invariant theory and Hamiltonian dynamics
8:00 – 11 (?) p.m.	Rector's Party Festsaal der Universität, Hauptgebäude (entrance from "Am Hof" street across from Bouvier bookstore)

#### Saturday, June 21, 1997

10:15 – 11:15 a.m.	L. Schwachhöfer (Leipzig) On the classification of holonomy groups
12:00 – 1:00 p.m.	A. Goncharov (MPI) Multiple polylogarithms at roots of unity and motivic Lie algebras
5:00 – 5:30 p.m.	V. Schechtman (MPI) Local structure of moduli spaces
5:30 – 6:00 p.m.	V. Ginzburg (Chicago) Hilbert schemes and reductive groups

#### Sunday, June 22, 1997

10:00 – 10:15 a.m.	Program discussion (II)
10:15 – 11:15 a.m.	R. Borcherds (Cambridge) Vertex algebras
12:00 – 1:00 p.m.	R. Pink (Mannheim) Motives and Hodge structures over function fields
5:00 – 6:00 p.m.	M. Kontsevich (I.H.E.S.) Deformation quantization

All lectures will take place in the "Großer Hörsaal", Wegelerstraße 10. There will be *tea breaks* on Saturday and Sunday from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 30 marks. *Lists of participants* and other information will be available at the entrance of the lecture room. All participants are requested to put their name on the list!

All Arbeitstagung participants and those accompanying them are invited to the *Rector's Party* this evening.

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### Program of the Mathematische Arbeitstagung 1997 (II)

#### Monday, June 23, 1997

- 10:15 – 11:15 a.m. Y. Tschinkel (U. of Illinois)  
Height zeta functions
- 12:00 – 9:00 p.m. Boat trip to Engers  
Departure with "Carmen Sylva" next to the Kennedy Bridge

#### Tuesday, June 24, 1997

- 10:00 – 10:15 a.m. Program discussion (III)
- 10:15 – 11:15 a.m. B. Leeb (Bonn)  
Rigidity of symmetric spaces and Euclidean buildings
- 12:00 – 1:00 p.m. D. Harbater (U. of Pennsylvania)  
Grothendieck-Teichmüller group and  
covers of  $\mathbf{P}^1$
- 5:00 – 6:00 p.m. L. Katzarkov (MPI)  
Complex surfaces and very interesting fundamental groups
- 7:30 – 9:30 p.m. Chamber Music Concert: Moscow-Königsberg String Quartet  
Aula der Universität, Hauptgebäude (entrance from  
"Am Hof" street across from Bouvier bookstore)

#### Wednesday, June 25, 1997

- 10:15 – 11:15 a.m. H. Miller (M.I.T.)  
Elliptic moduli in algebraic topology
- 12:00 – 1:00 p.m. W. Nahm (Bonn)  
Branes

All lectures will take place in the "Großer Hörsaal", Wegelerstraße 10.

There are *tea breaks* on Tuesday and Wednesday from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 30 marks.

Lists of participants and other information will be available at the entrance of the lecture room.  
All participants are requested to put their name on the list!

All Arbeitstagung participants and those accompanying them are warmly invited to the boat trip on Monday and to the chamber music program on Tuesday evening.

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**Program of the Mathematische Arbeitstagung 1997 (III)**

**Wednesday, June 25, 1997**

- 4:45 – 5:00 p.m.      Program discussion (IV)  
5:00 – 6:00 p.m.      E.Getzler (Northwestern U.)  
                            Counting elliptic curves in projective varieties

**Thursday, June 26, 1997**

- 10:15 – 11:15 a.m.      V. Gritsenko (MPI)  
                            Discriminants of  $K3$ -surfaces and Kac-Moody algebras  
12:00 – 1:00 p.m.      F. Pop (Bonn)  
                            The anabelian conjecture  
5:00 – 6:00 p.m.      M. Mahowald (Northwestern U.)  
                            Curves of higher genus and homotopy theory

All lectures will take place in the “Großer Hörsaal”, Wegelerstraße 10.

There are *tea breaks* on Tuesday and Wednesday from 11:15 to 12 a.m. and 4:15 to 5 p.m. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 30 marks.

Lists of participants and other information will be available at the entrance of the lecture room.  
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## Program of the Mathematische Arbeitstagung 1999 (I)

### Friday, June 18, 1999

3:30 - 4:15 p.m.	Opening and first program discussion (I)
5:00 - 6:00 p.m.	A. Connes (IHES) <i>"Explicit formulas as trace formulas, quantized calculus, and spectral interpretation of the zeros of the Riemann zeta function"</i>
8:00 - 10:30 p.m.	<b>Chamber music concert:</b> String Trio Hörsaal (Auditorium) MPI

### Saturday, June 19, 1999

10:00 - 11:00 a.m.	H. Esnault (Essen) <i>"Riemann-Roch theorems for flat bundles"</i>
12:00 - 1:00 p.m.	V. Schechtman (Glasgow) <i>"Vertex operator algebras and elliptic genus"</i>
5:00 - 6:00 p.m.	W. Ziller (U. of Pennsylvania) <i>"Curvature and symmetry of Milnor spaces"</i>

### Sunday, June 20, 1999

10:00-10:15 a.m.	Program discussion (II)
10:15 - 11:15 a.m.	A. Goncharov (Brown U./MPI) <i>"Galois groups, geometry of modular varieties and graphs"</i>
12:00 - 1:00 p.m.	V. A. Gritsenko (POMI/Lille/MPI) <i>"Generalized elliptic genera"</i>
5:00 - 6:00 p.m.	M. Rapoport (Köln) <i>"Intersection numbers of Heegner cycles"</i>

All lectures will take place in the "Großer Hörsaal", Wegelerstraße 10.

There will be **tea breaks** on Saturday and Sunday from 11:15 to 12:00 a.m. and 4:15 to 5 p.m.

At this time also mail will be distributed and you will have the opportunity to  
**pay your Tagungsbeitrag (registration fee) of DM 30.**

Lists of participants and other information will be available at the entrance of the lecture room.

**All participants are requested to put their name on the list!**

All Arbeitstagung participants and those accompanying them are invited to the  
**\*\*\*\* Chamber music concert this evening (Auditorium MPI). \*\*\*\***

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## Program of the Mathematische Arbeitstagung 1999 (II)

### Monday, June 21, 1999

10:00-11:00 a.m.

N. A'Campo (Basel)

"*Immersed curves, knots and singularities*"

1:00-approx. 8:00 p.m.

**Boat trip**

### Tuesday, June 22, 1999

10:00 - 10:15 a.m.

Program discussion (III)

10:15-11:15 a.m.

Ch. Soulé (IHES)

"*On the field with one element*"

12:00 - 1:00 p.m.

Y. Rudyak (Siegen)

"*On category weight and the Arnold conjecture*"

5:00 - 6:00 p.m.

G. Böckle (Mannheim)

"*L-functions over function fields*

*A cohomological approach*"

### Wednesday, June 23, 1999

10:00 - 11:00 a.m.

D. Abramovich (Boston U./MPI)

"*Factorization of birational maps*"

All lectures will take place in the "Großer Hörsaal", Wegelerstraße 10.

There will be **tea breaks** on Tuesday and Wednesday from 11:15 to 12:00 a.m. and 4:15 to 5 p.m.

At this time also mail will be distributed and you will have the opportunity to  
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Lists of participants and other information will be available at the entrance of the lecture room.

**All participants are requested to put their name on the list!**

All Arbeitstagung participants and those accompanying them are invited to the

\*\*\*\* Schiffsausflug (boat trip) on Monday (1:00 p.m. - approx. 8:00 p.m.) \*\*\*\*

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## Program of the Mathematische Arbeitstagung 1999 (III)

### Wednesday, June 23, 1999

- |                  |   |
|------------------|---|
| 10:15-11:15 a.m. | D. Abramovich (Boston U./MPI)<br><i>"Factorization of birational maps"</i>                  |
| 12:00-1:00 p.m.  | A. Suslin (Northwestern U.)<br><i>"Bloch-Kato conjecture "</i>                              |
| 3:30 p.m.        | "Hirzebruch's festivities"<br>(in the MPIM, Vivatsgasse 7 !)                                |
| 5:15-6:15 p.m.   | D. Zagier (MPI)<br><i>"Half-derivatives of modular forms and invariants of 3-manifolds"</i> |

### Thursday, June 24, 1999

- |                   |   |
|-------------------|---|
| 10:00-11:00 a.m.  | T. Venkataramana (Bombay)<br><i>"Restriction maps in cohomology of arithmetic groups"</i> |
| 12:00 - 1:00 p.m. | M. Kontsevich (IHES)<br><i>"Non-commutative smooth spaces"</i>                            |
| 5:00 - 6:00 p.m.  | M. Saïdi (Bonn)<br><i>"Raynaud's theorem on coverings of curves"</i>                      |

All lectures will take place in the "Großer Hörsaal", Wegelerstraße 10.

There will be **tea breaks** on Wednesday and Thursday from 11:15 to 12:00 a.m. and 4:15 to 5 p.m.

At this time also mail will be distributed and you will have the opportunity to  
**pay your Tagungsbeitrag (registration fee) of DM 30.**

Lists of participants and other information will be available at the entrance of the lecture room.

**All participants are requested to put their name on the list!**

All Arbeitstagung participants and those accompanying them are invited to the

**\*\*\*\* Rector's party this evening (Tuesday, June 22) at 8:00 p.m. \*\*\*\***  
**(Festsaal der Universität, Hauptgebäude, entrance from "Am Hof")**

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### Program of the Mathematische Arbeitstagung 2001 (I)

#### Wednesday, June 13, 2001

- 3:30 – 4:15 p.m.      Opening and first program discussion
- 5:00 – 6:00 p.m.      R. Taylor (Harvard)  
On a conjecture of Fontaine and Mazur
- 7:30 – 8:30 p.m.      Concert in the Hörsaal (Auditorium) of the MPI  
Mark Russell, solo violin improvisations

#### Thursday, June 14, 2001

- 10:00 – 11:00 a.m.      T. Hales (U. of Michigan)  
Sphere packings in 3 dimensions
- 12:00 – 1:00 p.m.      V. Ginzburg (U. of Chicago)  
On non-commutative geometry
- 5:00 – 6:00 p.m.      G. Kings (Münster/MPI)  
Polylogarithms, Bloch-Kato conjecture, and  
special values of  $L$ -functions

#### Friday, June 15, 2001

- 10:00 – 11:00 a.m.      H. Tamvakis (U. of Pennsylvania/MPI)  
Cohomology and quantum cohomology Grassmannians
- 12:00 – 1:00 p.m.      P.M.N. Feehan (Dublin/MPI)  
On Seiberg-Witten and Donaldson invariants
- 5:00 – 6:00 p.m.      J-P. Demailly (Inst.Fourier Grenoble)  
Numerical characterization of the Kähler cone of a  
compact Kähler manifold
- 8:00 – 11 (?) p.m.      Rector's Party  
Festsaal der Universität, Hauptgebäude (entrance from  
“Am Hof” street across from Bouvier bookstore)

p.t.o.

**Saturday, June 16, 2001**

10:00 – 10:15 a.m.	Program discussion (II)
10:15 – 11:15 a.m.	A. Beilinson (U. of Chicago) $\epsilon$ -factors in the deRham setting
12:00 – 1:00 p.m.	L. Berkovich (Samara St.U.) On a method of exact linearization of nonlinear DE's
5:00 – 6:00 p.m.	N. Hitchin (Oxford) Gerbs and special Lagrangian varieties

All lectures will take place in the "Großer Hörsaal," Wegelerstraße 10. There will be *tea breaks* from 11:15 to 12 a.m. in Wegelerstrasse and 3:30 to 4:30 p.m. in the MPI. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 30 marks. *Lists of participants* and other information will lie out in Wegelerstrasse and in the MPI. *All* participants are requested to put their name on the list!

\*\*\*\* All Arbeitstagung participants and those accompanying them are invited to the *Concert* on Wednesday and the *Rector's Party* on Friday \*\*\*\*

Max-Planck-Institut  
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## Program of the Mathematische Arbeitstagung 2001 (II)

### Sunday, June 17, 2001

- |                    |   |
|--------------------|---|
| 10:00 – 11:00 a.m. | B. Wilking (Münster)<br>Positive curvature  |
| 12:00 – 13:00 p.m. | St. Kudla (U. of Maryland)<br>Derivatives of Eisenstein series and intersection numbers |
| 5:00 – 6:00 p.m.   | W. Müller (U. Bonn)<br>Cusp forms for $GL_n$  |

### Monday, June 18, 2001

- |                     |  |
|---------------------|--|
| 10:00 – 11:00 a.m.  | L. Lafforgue (I.H.E.S.)<br>Drinfeld's shtukas and Langlands's correspondence |
| 1:00 – ca.8:00 p.m. | Boat Trip<br>See special leaflet   |

### Tuesday, June 19, 2001

- |                    |  |
|--------------------|--|
| 10:00 – 11:00 a.m. | P. Gunnells (Rutgers/MPI)<br>On toric varieties and modular forms            |
| 12:00 – 13:00 p.m. | O.N. Ageev (Moscow St.Techn.U./MPI)<br>Dynamical systems (spectral theory)   |
| 5:00 – 6:00 p.m.   | M. Kapranov (U. of Toronto)<br>The space of formal loops and vertex algebras |

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### Program of the Mathematische Arbeitstagung 2003 (I)

#### Friday, June 13, 2003

- 3:30 – 4:15 p.m.      Opening and first program discussion  
5:00 – 6:00 p.m.      M. Kontsevich (I.H.E.S.)  
                            SLE, CFT and phase boundaries

#### Saturday, June 14, 2003

- 10:00 – 11:00 a.m.      R. Sujatha (Tata Institute)  
                            Non-commutative Iwasawa theory  
12:00 – 1:00 p.m.      M. Kapovich (U. of Utah)  
                            Geometrization conjecture and Ricci flow  
5:00 – 6:00 p.m.      I. Hambleton (McMaster U.)  
                            Smooth group actions on 4-manifolds

#### Sunday, June 15, 2003

- 10:00 – 10:15 a.m.      Program discussion (II)  
10:15 – 11:15 a.m.      C. McMullen (Harvard U.)  
                            Billiards and Hilbert modular surfaces  
12:00 – 1:00 p.m.      M. Marcolli (MPIM)  
                            Non-commutative arithmetic geometry  
5:00 – 6:00 p.m.      F. Pop (U. Bonn)  
                            Anabelian geometry

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## Program of the Mathematische Arbeitstagung 2003 (II)

### Monday, June 16, 2003

- 10:00 – 11:00 a.m. Y. Soibelman (Kansas St.U.)  
Deformations of algebras
- 12:00 – ca. 7:00 p.m. Boat Trip  
See special leaflet

### Tuesday, June 17, 2003

- 10:00 – 10:15 a.m. Program discussion (III)
- 10:15 – 11:15 a.m. H. Esnault (Essen)  
Rational points on Fano varieties
- 12:00 – 13:00 p.m. N. A'Campo (Basel U.)  
Knots and Galois groups
- 5:00 – 6:00 p.m. G. van der Geer (Amsterdam) and/or G. Harder (MPIM)  
Congruences between genus 1 and genus 2 modular forms
- 8:00 – 11 p.m. Rector's Party  
Festsaal der Universität, Hauptgebäude (entrance from  
"Am Hof" street across from Bouvier bookstore)

### Wednesday, June 18, 2003

- 10:00 – 11:00 a.m. M. Levine (Northeastern/Essen)  
Algebraic cobordism

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### Program of the Mathematische Arbeitstagung 2003 (III)

#### Wednesday, June 18, 2003

- 12:00 – 13:00 p.m. M. Belolipetskiy (Novosibirsk)  
Extremal surfaces and volumes of arithmetic hyperbolic  $n$ -manifolds
- 5:00 – 6:00 p.m. G. Farkas (U. of Michigan)  
Slope conjecture

#### Thursday, June 19, 2003

- 10:00 – 11:00 a.m. V. Vologodsky (Harvard/IHES)  
Hodge-Higgs structure in finite characteristic
- 12:00 – 13:00 p.m. N. Ramachandran (U. of Maryland)  
Special values of Zeta functions
- 5:00 – 6:00 p.m. Y. Flicker (Ohio State U.)  
Automorphic forms on  $Sp_2$

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### Program of the Mathematische Arbeitstagung 2005 (I)

#### Friday, June 10, 2005

- 3:30 – 4:15 p.m.                    Opening and first program discussion  
5:00 – 6:00 p.m.                    M. Kontsevich (I.H.E.S.)  
    Automorphisms of the Weyl algebra

#### Saturday, June 11, 2005

- 10:00 – 11:00 a.m.                M. Kim (University of Arizona at Tucson and MPIM)  
    Around the section conjecture  
12:00 – 1:00 p.m.                 U. Hamenstädt (Bonn University)  
    Mapping class group  
5:00 – 6:00 p.m.                 G. Moore (Rutgers University)  
    Black holes and arithmetic

#### Sunday, June 12, 2005

- 10:00 – 10:15 a.m.                Program discussion (II)  
10:15 – 11:15 a.m.                H. Moscovici (Ohio State University)  
    Modular Hecke algebras  
12:00 – 1:00 p.m.                W. Lück (Münster University and MPIM)  
     $L^2$ -cohomology and geometric group theory  
5:00 – 6:00 p.m.                 J.-M. Bismut (Orsay)  
    Hypoelliptic laplacian

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## Program of the Mathematische Arbeitstagung 2005 (II)

### Monday, June 13, 2005

10:00 – 11:00 a.m.	M. Möller (Essen University) Hodge theory of Teichmüller curves
12:00 – 1:00 p.m.	V. Gritsenko (Lille and MPIM) Moduli spaces of $K3$ -surfaces
5:00 – 6:00 p.m.	C. Faber (KTH Stockholm and Johns Hopkins) Moduli spaces of curves
8:00 – 11 p.m.	Rector's Party Festsaal der Universität, Hauptgebäude (entrance from "Am Hof" street across from Bouvier bookstore)

### Tuesday, June 14, 2005

9:45 – 10:00 a.m.	Program discussion (III)
10:00 – 11:00 a.m.	M. Marcolli (MPIM) Renormalisation for dummies
12:00 – ca. 7:00 p.m.	Boat Trip See special leaflet

All lectures will take place in the "Großer Hörsaal," Wegelerstraße 10. Except for Tuesday, there will be *tea breaks* from 11:00 a.m. on in Wegelerstrasse and 3:30 p.m. on in the MPI. At this time also *mail* will be distributed and you will have the opportunity to pay your *Tagungsbeitrag* of 30 Euro.

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**Program of the Mathematische Arbeitstagung 2005 (III)**

**Wednesday, June 15, 2005**

10:00 – 11:00 a.m.      E. Friedlander (Northwestern)  
                                  Representations of finite group schemes

11:45 – 12:45 p.m.      H. Geiges (Köln University)  
                                  Contact surgery and property P

5:00 – 6:00 p.m.      A. Dzhumadildaev (Kazakhstan and MPIM)  
                                  Polycommutators of vector fields

**Thursday, June 16, 2005**

10:00 – 11:00 a.m.      P. Aluffi (Florida State University and MPIM)  
                                  Stringy Chern classes

11:45 – 12:45 p.m.      Y. Manin (MPIM)  
                                  Non commutative modular symbols

5:00 – 6:00 p.m.      A. Gerasimov (ITEP Moscow and MPIM)  
                                  Towards integrability of topological strings

All lectures will take place in the “Großer Hörsaal,” Wegelerstraße 10. There are *tea breaks* from 11:00 a.m. on in Wegelerstrasse and 3:30 p.m. on in the MPI. At this time also *mail* will be distributed and you will still have the opportunity to pay your *Tagungsbeitrag* of 30 Euro. *Lists of participants* and other information will lie out in Wegelerstrasse and in the MPI. All participants are requested to put their name on the list!