Section 03: Number Theory and Arithmetic Algebraic Geometry

Invited Lectures

Saturday, 22 August — MA 005

14:00 – 14:45 **Vladimir Berkovich,** Weizmann Institute of Science, Rehovot, Israel
p-adic analytic spaces *(I: p.48, electronic version)*
Chair: Norbert Schappacher

15:00 – 15:45 **Pierre Colmez,** CNRS, ENS, and Institut de Mathématiques de Jussieu, Paris, France
(φ, Γ)-modules and Iwasawa theory of p-adic representations *(I: p.49)*
Chair: Christophe Soulé

Monday, 24 August — MA 005

16:15 – 17:00 **François Gramain,** Université Jean Monnet Saint-Etienne, Saint-Etienne, France
Some results of algebraic independence *(I: p.51)*
Chair: Michel Waldschmidt

17:15 – 18:00 **William Duke,** Rutgers University, New Brunswick, USA
Bounds for arithmetic multiplicities *(I: p.50)*
Chair: Per Salberger

Tuesday, 25 August — MA 005

14:00 – 14:45 **Loïc Merel,** Université Paris 7 - Denis Diderot, Paris, France
Determination of rational points using Dirichlet series *(I: p.52)*
Chair: Wilhelm Zink

15:00 – 15:45 **Shinichi Mochizuki,** RIMS, Kyoto University, Kyoto, Japan
The Intrinsic Hodge Theory of p-adic Hyperbolic Curves *(I: p.53)*
Chair: Helmut Koch

Wednesday, 26 August — MA 005

15:00 – 15:45 **Takeshi Tsuji,** RIMS, Kyoto University, Kyoto, Japan
p-adic Hodge Theory in the semi-stable reduction case *(I: p.55)*
Chair: Helmut Koch

16:15 – 17:00 **Shou-Wu Zhang,** Columbia University, New York City, USA
Small points, Heegner points, and Arakelov theory *(I: p.57)*
Chair: Jürg Kramer

17:15 – 18:00 **Hans Peter Schlickewei,** Universität Marburg, Marburg, Germany
The Absolute Subspace Theorem and Applications *(I: p.54)*
Chair: Alfred J. van der Poorten

Short Communications and Poster Sessions

Short Communications — Wednesday, 19 August

Computational Number Theory — **MA 311**
Chair: Michael E. Pohst

14:00 – 14:15	**Claus Fieker,** Technische Universität Berlin, Berlin, Germany *On Constructive Class Field Theory*	*(p.36)*
14:15 – 14:30	**István Gaál,** KLTE, Institute of Mathematics, Debrecen, Hungary *Power integral bases in algebraic number fields*	*(p.36)*
14:30 – 14:45	**Jürgen Klüners,** Universität Heidelberg, Heidelberg, Germany *Explicit Galois realization of transitive groups of degree up to 15*	*(p.40)*

Additive Number Theory — **MA 311**
Chair: Doytchin Tolev

15:00 – 15:15	**Mariano Garcia,** Touro College, N.Y. City, USA *New type $(i, 1)$ amicable pairs with greatest common factor a power of 2 or a prime times a power of 2*	*(p.37)*
15:15 – 15:30	**Nazir M. Khan,** GIK Institute of Engg. Sc. & Tech., Topi-Swabi, Pakistan *The Numbers that Can Be Represented as the Sum of Four Squares (One Repeating Itself Three Times), in Three Different Ways*	*(p.39)*
15:30 – 15:45	**Doytchin Tolev,** University of Plovdiv, Plovdiv, Bulgaria *Additive problem with prime numbers of a special type*	*(p.46)*

Short Communications — Thursday, 20 August

Cyclotomy — **MA 311**
Chair: Stanley J. Gurak

14:00 – 14:15	**Grzegorz, M. Banaszak,** Wydzial Matematyki i Informatyki, Univ., Poznan, Poland *Wild kernel for higher K-groups and arithmetic of square rings*	*(p.34)*
14:15 – 14:30	**Mónica del Pilar Canales,** Universidad Austral de Chile, Valdivia, Chile *Higher levels of $Z/p^l Z$ and cyclotomy*	*(p.34)*
14:30 – 14:45	**Stanley J. Gurak,** University of San Diego, San Diego CA, USA *On the factors $\Phi^{(j\delta/m)}(x)$ of the period polynomial for finite fields*	*(p.37)*

Function Fields and Curves I — **MA 311**
Chair: Franck Leprévost

15:00 – 15:15	**Florian Heß,** TU Berlin, Berlin, Germany *Effective construction of Riemann-Roch spaces in global function fields*	*(p.38)*
15:15 – 15:30	**Ryutaro Horiuchi,** Doshisha University, Kyotanabe-shi, Japan *On Weierstrass Points of the Fermat Curve*	*(p.38)*
15:30 – 15:45	**Franck Leprévost,** Technische Universität Berlin, Berlin, Germany *On some elliptic surfaces and elliptic curves related to discriminants of cubic or quartic polynomials*	*(p.41)*

Short Communications — Friday, 21 August

Algebraic Geometry I — **MA 311**
Chair: Jürgen Wolfart

16:15 – 16:30	**Emmanuel Peyre,** Université de Strasbourg, Strasbourg, France *Heights and Tamagawa measures*	*(p.44)*
16:30 – 16:45	**Valentin E. Voskresenskii,** Samara State University, Samara, Russia *Stably rational algebraic tori*	*(p.46)*
16:45 – 17:00	**Jürgen Wolfart,** Universität Frankfurt, Frankfurt, Germany *Riemann surfaces with many automorphisms*	*(p.47)*

Modular Forms Chair: Yoichi Uetake	**MA 311**
17:15 – 17:30 **Werner Hoffmann,** Institute for Advanced Study, Princeton NJ, USA *Spectral estimates for noncompact quotients*	*(p.38)*
17:30 – 17:45 **Wladimir de Azevedo Pribitkin,** Max Planck Institute for Mathematics, Bonn, Germany *Bol's identity, fractional differentiation, and automorphic integrals*	*(p.45)*
17:45 – 18:00 **Yoichi Uetake,** Adam Mickiewicz University, Poznań, Poland *A weak resolvent representation of a scattering matrix for automorphic functions*	*(p.46)*

Short Communications — Saturday, 22 August

Integral Matrices Chair: Jean-Louis Nicolas	**MA 311**
16:15 – 16:30 **Shashikant Katre,** University of Pune, Pune, India *Matrices over orders in algebraic number fields as sums of k-th powers*	*(p.39)*
16:30 – 16:45 **Dmitri Malinin,** Byelorussian State Pedagogical University, Minsk, Belarus *Integral representations of finite groups*	*(p.42)*
16:45 – 17:00 **Jean-Louis Nicolas,** Universite Claude Bernard, Villeurbanne, France *On the maximum order of torsion elements in* $GL(n,\mathbb{Z})$	*(p.43)*

Algebraic Geometry II Chair: Jörg Wildeshaus	**MA 042**
16:15 – 16:30 **Jörg Wildeshaus,** Math. Inst. der Univ. Münster, Münster, Germany *Degeneration of Shimura Polylogarithms*	

Analytic Number Theory I Chair: Jin Nakagawa	**MA 311**
17:15 – 17:30 **Antanas Laurincikas,** Vilnius University, Vilnius, Lithuania *Value-distribution theorems on Lerch zeta-functions*	*(p.40)*
17:30 – 17:45 **Roberto J. Miatello,** University Nac. Cordoba, Cordoba, Argentina *Estimates for Kloosterman sums for totally real number fields*	*(p.42)*
17:45 – 18:00 **Jin Nakagawa,** Jeotsu University of Education, Joetsu, Japan *Ohno conjecture on the zeta functions associated with the space of binary cubic forms*	*(p.43)*

Short Communications — Monday, 24 August

Lattices and Codes Chair: Fei Xu	**MA 311**
14:00 – 14:15 **San Ling,** National University of Singapore, Singapore, Singapore *Group algebras and codes*	*(p.41)*
14:15 – 14:30 **Katherine S. Roegner,** Technische Universität Berlin, Berlin, Germany *Computing even, unimodular lattices with complete root systems*	*(p.46)*
14:30 – 14:45 **Fei Xu,** Mathematisches Institut Universität Münster, Münster, Germany *Arithmetic Springer Theorem on Quadratic Forms under Field Extensions of Odd Degree*	*(p.48)*

Diophantine Problems Chair: Pieter Moree	**MA 311**
15:00 – 15:15 **Arturas Dubickas,** Vilnius University, Vilnius, Lithuania *Polynomials vanishing at 1 with high multiplicity and Tarry's problem*	*(p.35)*
15:15 – 15:30 **Florian G. Luca,** Syracuse University, Syracuse NY, USA *Equations Involving the Euler* ϕ *Function*	*(p.42)*
15:30 – 15:45 **Pieter Moree,** Max-Planck-Institut, Bonn, Germany *Distribution of primes having a prescribed primitive root over residue classes*	*(p.43)*

Short Communications — Tuesday, 25 August

Arithmetic Functions — **MA 311**
Chair: Yasutoshi Nomura

16:15 – 16:30	**Philippe Ph. Elbaz-Vincent,** CNRS, Montpellier, France *On Poly(ana)logs*	*(p.35)*
16:30 – 16:45	**Arne Winterhof,** Institut für Algebra und Zahlentheorie, Braunschweig, Germany *On Incomplete Character Sums*	*(p.47)*
16:45 – 17:00	**Yasutoshi Nomura,** Okayama University of Science, Okayama, Japan *Arithmetic functions associated with arithmetic-geometric mean quotients*	*(p.44)*

Analytic Number Theory II — **MA 311**
Chair: Jan-Christoph Puchta

17:15 – 17:30	**Julio Alcantara-Bode,** PUCP, IMCA, Lima, Peru *Reorderings of some divergent series and applications*	*(p.34)*
17:30 – 17:45	**Michel L. Lapidus,** University of California, Riverside, CA, USA *Complex Dimensions of Fractal Strings and Oscillatory Phenomena in Fractal Geometry and Arithmetic*	*(p.40)*
17:45 – 18:00	**Jan-Christoph Puchta,** Budapest, Hungary *Estimating Dirichlet L-serieses close to the line $1 + it$*	*(p.45)*

Short Communications — Wednesday, 26 August

Function Fields and Curves II — **MA 311**
Chair: Dmitry Logachev

14:00 – 14:15	**Sudhir R. Ghorpade,** Indian Institute of Technology, Bombay, India *Number of Points of Singular Varieties over Finite Fields*	*(p.37)*
14:15 – 14:30	**Seman Wong,** Brown University, Providence, Rhode Island, USA *On the density of elliptic curves*	*(p.47)*
14:30 – 14:45	**Dmitry Logachev,** MIRAN Section of Algebra, Moscow, Russia *Mazur–Bloch method for Siegel threefolds*	*(p.41)*

Poster Session — Thursday, 20 August

16:15 – 18:00 — **MA 144**

Francis W. Clarke, University of Wales Swansea, Swansea, Great Britain
Closed formulas for representing primes by binary quadratic forms *(p.35)*

Herbert Gangl, MPI für Mathematik, Bonn, Germany
Polylogarithmic identities in cubical higher Chow groups *(p.36)*

Noriaki Kimura, Nihon University, Narashino, Japan
A simple proof of Carlitz's congruence of Vandiver type *(p.39)*

Tatsuya Okada, Fukushima Medical College, Fukushima, Japan
Explicit formulas for a generalized digital sum problem *(p.44)*

Margaret M. Robinson, Mount Holyoke College, South Hadley, USA
Igusa local zeta functions *(p.45)*