Foundations of Computational Mathematics

FoCM'2005

University of Cantabria
30 June - 9 July

Programme

Contents

Chapter 1

General FoCM'05 Schedule

1.1 Locations

1.1.1 Registration Desk.

The Registration Desk will located at the School of Telecommunications. **Registration Check-in** on Thursday, June, 30th from 8:30 to 9:15. It will be open at the School of Telecommunications from 9:00 till 13:00.

1.1.2 Official opening of the conference

Thursday, June 30th at 9:30, Salón de Actos, Facultad de Derecho y CC. Económicas.

09:30-09:35 Endre Suli *Opening remarks.*

09:35-09:40 Rector/Dean *Welcome speach.*

09:40-09:45 Luis Pardo *Practical information.*

1.1.3 Plenary Lectures, Morning Schedule.

Plenary Lectures will be at the Salón de Actos of the Facultad de Derecho y CC. Económicas. in the Campus.[1] All Plenary Lectures will be at the Salón de Actos, Facultad de Derecho y CC. Económicas..

09:00-10:00 Lecture 1

10:00-10:50 Coffee-break

10:50-11:50 Lecture 2

11:50-01:50 Lunch-break

[1]Except Day 1 of Periods 1,2,3. See *Special Events*

1.1.4 Workshops

All workshops will be held by the School of Telecommunications. See the Room number at each workshop Schedule.

PERIOD 1: 30 June - 02 July [Thursday, Friday, Saturday]

PERIOD 2: 04 July - 06 July [Monday, Tuesday, Wednesday]

PERIOD 3: 07 July - 09 July [Thursday, Friday, Saturday]

1.1.5 Classrooms at the School.

Each workshop has a room number which will be found on the corresponding schedule.
At the School of Telecommunications room numbers are enumerated as follows:

- **Level Zero.** It is the floor of the entrance and there you will find rooms 05,06,07...
- **Level -1.** Rooms at Level -1 are 14,16,17,....
- **Salón de Grados.** It is located at Level -1.

1.1.6 Internet Room

There will be a room with internet access to web e-mail services at Floor +1, Room 110-B. It will be indicated with several panels.
There will also be an option to have wireless connection through your own laptop. Instruction on how to connect will be distributed in Registration Bags.

1.2 Social Programme

Sunday 03 July: Excursion to Santillana del Mar

Wednesday 06 July: Conference Dinner

1.3 Special Events

Monday 04 July:

8:55 Luis Pardo *Practical remarks for newly arrived participants*

Tuesday 05 July: Meeting of the Board of FoCM (after dinner)

Thursday 07 July:

8:55 Luis Pardo *Practical remarks for newly arrived participants*

Friday 01 July: (10:50-11:00) **Information-based Complexity Prize Award Ceremony**:

2004 Young Researcher Award

2005 Information-based Complexity Prize

2004 Best Journal of Complexity Paper Award

Schedule, Period

Part I

Period 1 :
Thu. 30th June- Sat. 2nd July

Period 1: Plenary Talks

Room:
Salón de Actos (Facultad de Derecho y CC. Económicas.)

Date	Hour	Speaker	Title
June 30	9:45-10:45	Robert Meyerhoff	*Hyperbolic 3-Manifolds and Their Computational Aspects*
June 30	11:30-12:30	Luis Miguel Pardo	*How Upper and Lower Complexity Bounds meet in Elimination Theory (Bézout $5\frac{1}{2}$)*
July 1	9:00-10:00	Endre Süli	*Computational Multiscale Modelling: Fokker-Planck Equations and Their Numerical Analysis*
July 1	11:00-12:00	Ian Sloan	*Numerical integration in high dimensions — the lattice side of the story*
July 2	9:00-10:00	Bernd Sturmfels	*Algebraic Statistics for Computational Biology*
July 2	10:50-11:50	Enrique Zuazua	*Propagation, dispersion, control and numerical approximation of waves*

Schedule, Period I

Period 1: Workshops

1.4 Workshop 3: Information-Based Complexity

ORGANISERS: Leszek Plaskota & Ian Sloan

Thursday, June 30: Room 11

Hour	Speaker	Title
13:50-14:40	H. Wózniakowski	*On the optimal convergence rate of universal and non-universal algorithms for multivariate integration and approximation*
	P. Mathe	*Summation of noisy orthogonal series*
14.45-15.25	K. Ritter	*An implicite Euler scheme with non-uniform time discretization for stochastic heat equations*
	T. Müller-Gronbach	*Error bounds for weak approximation of diffusion processes*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	S. Heinrich	*On the randomized and quantum complexity of elliptic PDE*
	C. Wiegand	*Optimal Monte Carlo and quantum algorithms for parametric integration*
16:50-17.35	A. Bessen	*A lower bound for the Sturm-Liouville eigenvalue problem on a quantum computer*
	J. Creutzig	TBA
17:40-18:25	B. Kacewicz (Semi-Plenary)	*Solving ordinary differential equations - from the worst case to quantum setting*

Friday, July 1: Room 11

Hour	Speaker	Title
13:50-14:40	F. Kuo (Semi-Plenary)	*Constructing good embedded lattice sequences with millions of points*
14:45-15:25	R. Cools	*Illustrated story of fast construction of embedded lattice sequences for weighted spaces*
	B. Waterhouse	*Randomly shifted lattice rules for unbounded integrands*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	F. Pillichshammer	*Mean square L_2-discrepancy of randomized digital nets in prime base*
	J. Dick	*Mean square L_2-discrepancy of randomized digital nets in prime base*
16:50-17:35	S. Tezuka	*Functions with the maximum effective dimension*
	P. Kritzer	*New upper bounds on the star discrepancy of (t, m, s) − nets and (t, s)-sequences*
17:40-18:25	H. Mhaskar	*Weighted quadrature formulas and approximation by zonal function networks on the sphere*
18:30-		Extended Organizing Committee of IBC

Saturday, July 2: Room 11

Hour	Speaker	Title
13:50-14:40	S. Dahlke	*Optimal approximation of elliptic problem by linear and nonlinear mappings II: Wavelet methods and the Poisson equation*
	E. Novak	*Optimal approximation of elliptic problems by linear and nonlinear mappings I: General concepts*
14:45-15:25	P. Hertling (Semi-Plenary)	*On the solvability of ill-posed problems in two models of computation*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	M. Kon	*A continuous complexity analysis of Support Vector Machines*
	M. Horn	*Global optimization without Lipschitz constant*
16:50-17:35	L. Plaskota	*Adaption makes it easy to integrate functions with unknown singularities*

1.5 Workshop 6: Special functions and orthogonal polynomials

ORGANISERS: Mourad Ismail, Guillermo Lopez & Ed Saff

Thursday, June 30: Room 06

Hour	Speaker	Title
13:50-14:35	T. Koornwinder (Semi-Plenary)	*Macdonald Polynomials: a Harish-Chandra Type Expansion and a Non-Polynomial Limit Case*
14:40-15:25	A. Durán	*Orthogonal Matrix Polynomials Satisfying Second Order Differential Equations*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	A. Its	*Quasi-linear Stokes Phenomenon for tronque Painlev Transcendents. The Riemann-Hilbert Approach*
16:50-17:10	A. Cachafeiro	*Connection Between Sobolev Orthogonal Polynomials on the Bounded Interval and the Circle. Asymptotics on the Real Line*
17:15-17:35	W. Gautschi	*TBA*
17:40-18:00	E. Miña-Díaz	*Electrostatic Mother Bodies and Zeros of Orthogonal Polynomials*

Friday, July 1: Room 16

Hour	Speaker	Title
13:50-14:35	A. Martínez-Finkelshtein	*Orthogonal Polynomials on the Unit Circle: the Riemann-Hilbert Perspective*
14:40-15:25	H. Stahl (Semi-Plenary)	*Orthogonal Polynomials, Padé Approximants, and Sets of Minimal Capacity*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	R. Wong	*Asymptotics of Orthogonal Polynomials - The Riemann-Hilbert Approach*
16:50-17:10	K. Driver	*The Zeros of Linear Combinations of Orthogonal Polynomials*
17:15-17:35	J. Sánchez-Dehesa	*TBA*
17:40-18:00	P. Clarkson	*Special Polynomials Associated with Rational and Algebraic Solutions of the Painlev Equations*
18:05-18:25	A. Branquinho	*Matrix Interpretation of Multiple Orthogonal Polynomials*

Saturday, July 2: Room 16

Hour	Speaker	Title
13:50-14:35	F. Peherstorfer	*Asymptotic Representation of L_p-minimal Polynomials, $1 \leq p \leq \infty$, and Applications in Numerical Analysis*
14:40-15:25	P. Marcellán	*Coherent Pairs of Measures Supported in Jordan Arcs and Curves*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	C. Berg (Semi-Plenary)	*A Positivity Result for Bessel Polynomials*
16:50-17:10	M.J. Cantero	*From the Schur Parameters to the Support of the Orthogonality Measure*
17:15-17:35	N. Temme	*The ABC of Hyper Recursions II*
17:40-18:25	R. Orive	*Hypergeometric Polynomials with Non-classical Parameters*

1.6 Workshop 8: Computational Algebraic Geometry

ORGANISERS: Teresa Krick & Andrei Gabrielov

Thursday, June 30: Room 05

Hour	Speaker	Title
13:50-14:35	W. Decker	*Some examples in computational algebraic geometry*
14:40-15:25	A. Khovanskii (Semi-Plenary)	*Insolvability of equations in finite terms*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	A. Dickenstein	*Binomial complete intersections*
16:50-17:35	B. Mourrain	*Subdivision methods for solving polynomial equations*
17:40-6:25	M. Sombra	*On the size of the solutions of sparse polynomial systems*

Friday, July 1: Room 15

Hour	Speaker	Title
13:50-14:35	O. Villamayor	*Flattening of morphisms and applications to singularities over perfect fields*
14:40-15:25	A. Grabrielov	*Lower bounds in some problems of real Schubert calculus*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	M. Giusti (Semi-Plenary)	*Singularities may reduce complexities... unfortunately not always!*
16:50-17:15	G. Jeronimo	*On the computation of resolvent representations*
17:20-17:45	M. Lotz	*On the computational complexity of the Hilbert polynomial*
17:50-18:25	C. D'Andrea	*On arithmetic aspects of sparse resultants*

Saturday, July 2: Room 15

Hour	Speaker	Title
13:50-14:35	N. Vorobjov	*Topological complexity of definable sets*
14:40-15:25	G. Lecert	*Quadratic Newton iteration for systems with multiple zeroes and clusters of zeroes*
15:30-16:00	TEA BREAK & Posters	
17:40-18:25	A. Szanto	*The nearest multivariate system with given root structure*
16:50-17:35	I. Itenberg (Semi-Plenary)	*Tropical geometry and asymptotic enumeration of real rational curves*
17:40-18:25	T. Recio	TBA

1.7 Workshop 10: Multiresolution and adaptivity in numerical PDEs

ORGANISERS: Wolfgang Dahmen, Bob Russell & Endre Süli

Thursday, June 30: Room *Salón de Grados*

Hour	Speaker	Title
13:50-14:35	P. Houston	*Discontinuous Galerkin finite element methods for second-order elliptic PDEs: a posteriori error estimation and adaptivity*
14:40-15:25	A. Cohen	*An adaptive multiscale semi-Lagrangian method for the Vlasov-Poisson equation*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	D. Estep (Semi-Plenary)	*Fast and reliable methods for determining the evolution of uncertain parameters in differential equations*
16:50-17:35	A. Kunoth	*Adaptive wavelet methods for linear-quadratic elliptic control problems*
17:40-18:25	W. Dahmen	*Towards multilevel meshless methods*

Friday, July 1: Room *Salón de Grados*

Hour	Speaker	Title
13:50-14:35	G. Petrova	*Adaptive semi-discrete central-upwind schemes for systems of conservation laws*
14:40-15:25	R. Stevenson	*Optimality of a standard adaptive finite element method*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	R. Hoppe	*Convergence analysis of adaptive MFEM and NFEM*
16:50-17:35	R. Nochetto (Semi-Plenary)	*Convergence of adaptive finite element methods for general elliptic operators and the Laplace-Beltrami operator*
17:40-18:25		Informal discussion session: *Open problems in computational multiscale modelling and adaptivity*

Saturday, July 2: Room *Salón de Grados*

Hour	Speaker	Title
13:50-14:35	C. Budd	*Scale-free adaptive methods for partial differential equations*
14:40-15:25	W. Huang	*Metric tensors for anisotropic mesh adaptation*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	C. Le Bris	*On the multiscale simulations of polymeric fluid flows*
16:50-17:35	S. Perotto	*A posteriori modeling-error analysis for free-surface flows*
17:40-18:25	R. DeVore (Semi-Plenary)	*A new class of anisotropic spaces*

1.8 Workshop 15: Geometric modelling and animation

ORGANISERS: Tom Lyche & Larry Schumaker

Thursday, June 30: Room 12

Hour	Speaker	Title
13:50-14:25	E. Cohen	*Parameterizing the Interiors of Solid Models Bounded by B-splines*
14:30-15:25	J.M. Peña	*Some Challenges in the Problem of Finding Shape Preserving Representations*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	T. Lyche	*Hermite Subdivision with Shape Constraints*
16:50-17:35	R. Farouki (Semi-Plenary)	*Geometrical and Algorithmic Foundations for the Minkowski Algebra of Complex Sets*
17:40-18:25	H. Prautzsch	*Morphing as Shadow Metamorphosis*

Friday, July 1: Room 12

Hour	Speaker	Title
13:50-14:25	M. Sabin	*The Analysis of Subdivision Curves*
14:30-15:25	H. Hagen	*Medial Axis as Distance Functions in Level Set Methods*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	L. Schumaker	*Recent Results on Trivariate Macro-Elements*
16:50-17:35	P. Brunet	*Geometry Processing Algorithms Based on Volume Discrete Models*
17:40-18:25	G. Brunnett (Semi-Plenary)	*Towards Automatic Segmentation in Reverse Engineering*

Saturday, July 2: Room 12

Hour	Speaker	Title
13:50-14:25	K. Mörken (Semi-Plenary)	*Computations with the Control Polygon*
14:30-15:25	M. Floater	*How Parameterization Affects the Approximation Order of Parametric Curve Fitting*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	C. Manni	*Geometric Properties of Parametric Tension Schemes*
16:50-17:35	C. Loop	*Shape from Shaders*
17:40-18:25	E. Zagar	*TBA*

1.9 Workshop 19: Computational geometry and topology

ORGANISERS: Rich Schwartz & Abigail Thompson

Thursday, June 30: Room 14

Hour	Speaker	Title
13:50-14:40	M. Culler	*The A-Polynomial and the FFT*
14:40-15:30	R. Ghrist	*Homological Sensor Networks*
15:30-16:00	TEA BREAK & Posters	
16:50-17:40	P. Hooper	*Computation and Billiards in Triangles*
17:40-18:25	N. Dunfield (Semi-Plenary)	*Does a Random 3-Manifold Fiber over the Circle*

Friday, July 1: Room 14

Hour	Speaker	Title
13:50-14:40	H. Edlesbrunner (Semi-Plenary)	*Steps into Computational Algebraic Topology*
14:40-15:30	J. Hass	*Computing Surface Intersections*
15:30-16:00	TEA BREAK & Posters	
16:00-16:50	A. Pratoussevitch	*Fundamental Domains in Three Dimensional Anti-De Sitter Space*
16:50-17:40	F. Lutz	*TBA*

Saturday, July 2: Room 14

Hour	Speaker	Title
13:50-14:40	M. Scharleman	*Alternate Heegaard genus bounds distance*
14:40-15:30	J. Sullivan (Semi-Plenary)	*Geometric Knot Theory*
15:30-16:00	TEA BREAK & Posters	
16:00-16:50	D. Thurston	*Computing with Simple Curves on a Surface*
16:50-17:40	M. Deraux	*Dirichlet domains in the complex hyperbolic plane*

1.10 Workshop 20: Mathematical control theory and applications

ORGANISERS: Eduardo Casas, Uwe Helmke, Jean-Pierre Raymond & Enrique Zuazua

Thursday, June 30: Room 07

Hour	Speaker	Title
13:50-14:35	H. Rabitz (Semi-Plenary)	*Controlling Quantum Dynamics Phenomena with Shaped Laser Pulses Acting as Photonic Reagents*
14:40-15:25	N. Khaneja	*Optimal Control of Spin Systems*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	A. Sarychev	*Controllability issues for the 2D Euler and Navier-Stokes systems*
16:50-17:35	K. Kunisch	*Semi-smooth Newton Methods in Function Spaces*
17.40-18.25	S. Nicaise	*Stability and controllability of an abstract evolution equation of hyperbolic type and some applications*

Friday, July 1: Room 13

Hour	Speaker	Title
13:50-14:35	X. Zhang	*A Unified Approach to the Controllability Theory of Stochastic Parabolic Equations, and Deterministic Parabolic and Hyperbolic Equations*
14:40-15:25	M. Tucsnak (Semi-Plenary)	*Some recent results on the analysis and the control of fluid-structure interactions*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	J.-P. Puel	*Recent results on exact controllability for Navier Stokes equations*
16:50-17:10	S. Guerrero	*Local exact controllability of the Boussinesq system in dimension 3*
17:15-17:35	J. H. Manton	*A Novel Algorithm for Joint Diagonalisation with a Geometric Interpretation*
17.40-18.25	J. Trumpf	*Observers for linear systems*

Saturday, July 2: Room 13

Hour	Speaker	Title
13:50-14:35	E. Casas	*Recent Advances in the Error Estimates for the Numerical Approximation of Semilinear Elliptic Optimal Control Problems*
14:40-15:25	F. Troeltzsch	*Numerical techniques for state-constrained elliptic optimal control problems*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	M. Sorine (Semi-Plenary)	*The heart: a controlled multi-scale distributed system*
16:50-17:10	C. Elia	*Using the continuous SVD decomposition to approximate spectra of dynamical systems*
17:15-17:35	K. Hueper	*Interpolation curves on S^n and SO_n by rolling and wrapping*
17:40-18:25	C. Martin	*Optimal control and numerical algorithms for ODEs*

Schedule, Period I

Part II

Period 2 :
Mon. 4th July- Wed. 6th July

Period 2: Plenary Talks

Room: Salón de Actos (Facultad de Derecho y CC. Económicas)

Date	Hour	Speaker	Title
July 4	9:00-10:00	Ernst Hairer	*Long-Time Energy Conservation of Numerical Integrators*
July 4	10:50-11:50	Adrian Lewis	*Nonsmooth Optimization and Eigenvalues*
July 5	9:00-10:00	Stephane Mallat	*Geometric Representations of Signals and Images*
July 5	10:50-11:50	Elizabeth Mansfield	*Discrete Variational Methods*
July 6	9:00-10:00	Eva Tardos	*Network Games and the Price of Anarchy or Stability*
July 6	10:50-11:50	Shang-Hua Teng	*Smoothed Analysis of Algorithms and Heuristics*

Schedule, Period II

Period 2: Workshops

1.11 Workshop 2: Geometric integration and computational mechanics

ORGANISERS: Begoña Cano, Debra Lewis & Brynjulf Owren

Monday, July 4: Room 11

Hour	Speaker	Title
13:50-14:35	A. Iserles (Semi-Plenary)	*On an isospectral Lie–Poisson flow and numerical computation of faithful Lie-algebra representations*
14.40-15.25	F. Casas	*Explicit Magnus expansions for nonlinear equations*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	E. Celledoni	*Eulerian and Semi-Lagrangian exponential integrators for convection dominated problems*
16:50-17.35	A. Zanna	*The Discrete Moser-Veselov Algorithm for the Free Rigid Body, Revisited*
17:40-18:25	M. Leok	*Lie Group and Elementary Differential Variational Integrators with Applications to Full Body Problems*

Tuesday, July 5: Room 11

Hour	Speaker	Title
13:50-14:35	B. Cano	*Conserved quantities of some Hamiltonian wave equations after full discretization*
14:40-15:25	T. Bridges (Semi-Plenary)	*Some questions about symplectic and multi-symplectic discretizations*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	J. Frank	*Dispersion properties of conservative discretizations for wave equations*
16:50-17:35	H. Munthe-Kaas	*Fourier analysis on groups applied to spectral element discretizations of PDEs*
17:40-18:25	B. Owren	*On Geometric Integrators for the Nonlinear Schrödinger equation*

Wednesday, July 6: Room 11

Hour	Speaker	Title
13:50-14:35	A. Murua	*An algebraic approach to conservation of first integrals in numerical integration*
14:40-15:25	F. Legoll	*Long time averaging for molecular dynamics simulations*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	B. Leimkuhler (Semi-Plenary)	*New Time Reversible and Volume Preserving Multiple Scale Integrators*
16:50-17:35	A. Durán	*Some results on numerical propagation when integrating Hamiltonian relative periodic orbits*
17:40-18:25	Y. Nishimori	*Riemannian Geometry of Neural Networks for Unsupervised Learning*

1.12 Workshop 4: Learning theory

ORGANISERS: Steve Smale, David McAllester, Tomaso Poggio & Gabor Lugosi

Monday, July 4: Room 12

Hour	Speaker	Title
13:50-14:35	N. Cesa Bianchi (Semi-Plenary)	*Regularized Least Squares for Classification*
14.40-15.25	A. Blum	*Kernels as Features: On Kernels, Margins, and Low-dimensional Mappings*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	A. Caponnetto	*Model selection and fast rates for regularized least-squares*
16:50-17.35	D. Zhou	*Learning Variable Covariances via Gradients*
17:40-18:25	M. Kearns	*Algorithmic Trading in Modern Markets*

Tuesday, July 5: Room 12

Hour	Speaker	Title
13:50-14:35	D. McAllester	*Generalization Bounds for Structured Classification*
14:40-15:25	P. Niyogi (Semi-Plenary)	*A Geometric Perspective on Learning Theory and Algorithms*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	T. Poggio	*Learning: new theoretical results and old applications*
16:50-17:35	C. Rudin	*AdaBoost: The Expected but Untrue, and the Unexpected but True*
17:40-18:25	S. Smale	*Learning theory algorithms and estimates without covering numbers*

Wednesday, July 6: Room 12

Hour	Speaker	Title
13:50-14:35	S. Van de Geer	*A theoretical comparison of regularized classifiers*
14:40-15:25	A. Verri	*Functional Methods for Learning Theory*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	M. Wainwright (Semi-Plenary)	*Stable message-passing and convex surrogates for learning in Markov random fields*
16:50-17:35	V. Vovk	*Defensive forecasting for decision making*
17:40-18:25	R. DeVore	*Adaptivity in Learning*

1.13 Workshop 5: Optimization

ORGANISERS: Raphael Hauser, Jim Renegar & Philippe Toint

Monday, July 4: Room 13

Hour	Speaker	Title
13:50-14:12	Burke	*Optimizing the Roots of Polynomials*
14.13-14.35	Hiriart-Urruty	TBA
14.40-15.25	Tuncel (Semi-Plenary)	*The Theory and the Reach of Interior-Point Methods Continue to Expand!*
15:30-16:00	TEA BREAK & Posters	
16:00-16:22	Todd	*Projectively related optimization problems and interior-point methods*
16:23-16.45	Faybusovich	*Implementation of Infinite-dimensional Interior-point method for solving multi-criteria Linear-Quadratic control problem*
16:50-17:12	Waechter	*Adaptive Barrier Parameter Strategies For Nonlinear Programming*
17:13-17:35	Orban	*Strategies for updating the barrier parameter in interior-point methods for nonlinear programming*
17:40-18:02	Kocvara	*Treating equality constraints in PENNON*
18:03-18:25	Cartis	*Overcoming Some Disadvantages of a Mehrotra-Type Primal-Dual Corrector Interior Point Algorithm for Linear Programming*
18:26-18:49		possible extra slot

Tuesday, July 5: Room 13

Hour	Speaker	Title
13:50-14:12	Vempala	*On the Rapid Convergence of Simulated Annealing*
14.13-14.35	Gurvits	*Hyperbolic van der Waerden conjecture, its proof and algorithmic applications*
14.40-15.02	Guler	*Homogeneous cone programming*
15.03-15.25	Chua	*Analyticity of Central Path for Homogeneous Cone Programming*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	Freund (Semi-Plenary)	*Randomized Methods for (Continuous) Deterministic Optimization and Associated Complexity Analysis*
16:50-17:12	Wolkowicz	*Robust algorithms for large sparse linear and semidefinite programming*
17:13-17:35	Cucker	TBA
17:40-18:02	Parrilo	TBA
18:03-18:25	Goldfarb	TBA

Wednesday, July 6: Room 13

Hour	Speaker	Title
13:50-14:12	de Klerk	*Reduction of symmetric semidefinite programs using the regular *-representation*
14.13-14.35	Kojima	*Exploiting Sparsity in Sums of Squares Relaxations of Polynomial Optimization Problems*
14.40-15.02	Lasserre	*SOS approximations of nonnegative polynomials*
15.03-15.25	Laurent	*Strengthened semidefinite bounds for code*
15:30-16:00	TEA BREAK & Posters	
16:00-16:22	Pena	*Computing the stability number of a graph via linear and semidefinite programming*
16:23-16:45	Wright	*Convex Quadratic Programming with Parameters*
16:50-17:35	Scheinberg (Semi-Plenary)	*Geometry of Sample Sets in Derivative Free Optimization*
17:40-18:02	Baes	*Smoothing techniques on Jordan algebras*
18:03-18:25	Sendov	*The Clarke Generalized Jacobian of the Projection onto the Cone of Positive Semi-definite Matrices*

1.14 Workshop 12: Relations with computer science: Algorithmic game theory and metric embeddings

ORGANISERS: Avrim Blum & Allan Borodin

Monday, July 4: Room 14

Hour	Speaker	Title
13:50-14:35	Y. Azar	*The Price of Routing Unsplittable Flow*
14:40-15:25	K. Jain	*An application of market equilibrium in distributed load balancing in wireless networking*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	B. Voecking (Semi-Plenary)	*Approximation Techniques for Utilitarian Mechanism Design*
16:50-17:35	J. Hartline	*Derandomization of Auctions*
17:40-18-25		*Discussion/open problems*

Tuesday, July 5: Room 14

Hour	Speaker	Title
13:50-14:35	A. Blum	*On Routing without Regret*
14:40-15:25	T. Roughgarden	*Computing (Correlated) Equilibria in Multi-Player Games*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	S. Vempala	*Nash Equilibria in Random Games*
16:50-17:35	M. Kearns (Semi-Plenary)	*The Effects of Network Structure on Equilibria and Computation*
17:40-18:25		*Discussion/open problems*

Wednesday, July 6: Room 14

Hour	Speaker	Title
13:50-14:35	A. Gupta	*Metric Embeddings into l_1 and the Sparsest Cut Problem*
14:40-15:25	A. Magen	*Metric Variance*
15:30-16:00	TEA BREAK & Posters	
16:00-16.45	Y. Rabani	*On Earthmover Distance, Metric Labeling, and 0-Extension*
16:50-17:35	A. Borodin	*Can there be a theory of algorithms?*
17:50-18:25	P. Indyk (Semi-Plenary)	*Approximations and streaming algorithms for geometric data*

1.15 Workshop 16: Image and signal processing

ORGANISERS: Albert Cohen & Guillermo Sapiro

Monday, July 4: Room 15

Hour	Speaker	Title
13:50-14:25	A. Iske	*A Novel Concept for Image Compression by Linear Splines over Adaptive Triangulations*
14:30-15:25	J. L. Starck	*Morphological Component Analysis and Applications*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	V. Caselles	*On Geometric Variational Models for Inpainting Surface Holes*
16:50-17:35	E. Candes (Semi-Plenary)	*Robust Uncertainty Principles and Signal Recovery from Highly Incomplete Information*
17:40-18:25	R. Baraniuk	*TBA*

Tuesday, July 5: Room 15

Hour	Speaker	Title
13:50-14:25	J. Tanner	*Sparse Nonnegative Solutions of Underdetermined Linear Equations by Linear Programming*
14:30-15:25	M. Bertalmio	*Real-time, Accurate Depth of Field using Anisotropic Diffusion and Programmable Graphics Cards*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	F. Memoli	*Comparing manifolds given as Point Clouds*
16:50-17:35	R. Willett	*Regression Level Set Estimation*
17:40-18:25	G. Seroussi (Semi-Plenary)	*Information-theoretic models in image processing*

Wednesday, July 6: Room 15

Hour	Speaker	Title
13:50-14:25	J.F. Cardoso (Semi-Plenary)	*TBA*
14:30-15:25	P. Arandiga	*Lossy, lossless and near-lossless image compression based on multiresolution analysis*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	J. Greer	*Numerically solving PDEs on Implicit Surfaces*
16:50-17:35	O. Faugeras	*TBA*
17:40-18:25	S. Osher	*Bregman iteration and the dual of BV in inverse problems in imaging and elsewhere*

1.16 Workshop 18: Symbolic Analysis

ORGANISERS: Elizabeth Mansfield, Peter Olver & Mike Singer

Monday, July 4: Room 16

Hour	Speaker	Title
13:50-14:35	P. Hydon	*Symmetries of initial-value problems*
14.40-15.25	I. Kogan	*Group-Invariant Moving Frames: Symbolic Computation and Applications.*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	F. Castro	*Cohomological questions in Computational D-module Theory*
16:50-17.35	M. Barakat	*An abstract MAPLE-package for homological algebra*
17:40-18:25	J. Sauloy (Semi-Plenary)	*Explicit invariants for linear q-difference equations*

Tuesday, July 5: Room 16

Hour	Speaker	Title
13:50-14:35	E. Hubert (Semi-Plenary)	*Rational and Replacement Invariants of a Group Action*
14:40-15:25	T. Wolf	*Some Symmetry Classifications of Hyperbolic Vector Evolution Equations*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	A. Leykin	*Deflation of polynomial systems at isolated solutions*
16:50-17:35	G. Reid	*Progress on Methods for Symbolic and Numeric Elimination Methods for Differential Systems*
17:40-18:25	J. Tuomela	*Elliptic boundary problems and Shapiro-Lopatinskij condition*

Wednesday, July 6: Room 16

Hour	Speaker	Title
13:50-14:35	R. Smirnov	*Superintegrability of the Calogero-Moser Model via Invariant Theory and Symbolic Analysis*
14:40-15:25	W. Seiler (Semi-Plenary)	*Vessiot Theory of Differential Equations*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	M. Rosenkranz	*Linear Two-Point Boundary Value Problems in Symbolic Computation: A New Approach*
16:50-17:35	M. Petkovsek	*Solution Spaces of Hypergeometric Systems and and the Structure of Hypergeometric Terms*
17:40-18:25	S. Gann	*Dividing fairly: Division of polynomials and power series by linear differential operators*

1.17 Workshop 21: Random Matrices

ORGANISERS: Ioana Dumitriu, Alan Edelman & Raj Rao

Monday, July 4: Room *Salón de Grados*

Hour	Speaker	Title
13:50-14:25	M. Potters (Semi-Plenary)	*Financial applications of random matrix theory: Risk control and portfolio optimization*
14.30-15.25	P. Biane	*Free probability and random matrices*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	L. Wolf	*Feature Selection via Random Matrix Theory*
16:50-17.35	T. Tanaka	*Statistical-mechanical analysis on the eigenvalue distribution of random matrices*
17:40-18:25	A. Tulino A. Edelman	 *Advances in Stochastic Eigen-Analysis*

Tuesday, July 5: Room *Salón de Grados*

Hour	Speaker	Title
13:50-14:25	D. Hoyle	*Learning eigenvectors and eigenvalues from limited high-dimensional data*
14:30-15:25	I. Johnstone (Semi-Plenary)	*Large Covariance Matrices: sparsity and estimation of principal eigenvectors*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	F. Benaych-Georges	*Asymptotics of rectangular random matrices: a general approach*
16:50-17:35	J. Silverstein	*Topics on the Eigenvalues of Large Dimensional Sample Covariance Matrices*
17:40-18:25	P. Koev N. Raj Rao	*The Efficient Computation of Multivariate Statistics though the Hypergeometric Function of a Matrix Argument* *The polynomial method: From theory to the random matrix calculator*

Wednesday, July 6: Room *Salón de Grados*

Hour	Speaker	Title
13:50-14:35	R. Müller	*Design of iterative multiuser decoders by means of random matrix theory*
14:40-15:25	B. Khoruzhenko	*Moments of spectral determinants of complex random matrices*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	A. Kuijlaars (Semi-Plenary)	*Universality for eigenvalue spacings of random matrices*
16:50-17:35	M. Capitaine	*Strong asymptotic freeness for Wigner and Wishart matrices*
17:40-18:25	J. Najim	*Deterministic equivalents for certain functionals of large random matrices*
	I. Dumitriu	*A β future for the classical ensembles of random matrices*

Part III

Period 3 :
Thu. 7th July- Sat. 9th July

Period 3: Plenary Talks

Room: Salón de Actos (Facultad de Derecho y CC. Económicas)

Date	Hour	Speaker	Title
July 7	9:00-10:00	Douglas Arnold	*Differential complexes and stability of finite element methods*
July 7	10:50-11:50	James Demmel	*On deciding whether accurate linear algebra algorithms exist*
July 8	9:00-10:00	Jan Denef	*Counting Points on Curves over Finite Fields*
July 8	10:50-11:50	Vladimir Temlyakov	*Greedy Approximations*
July 9	9:00-10:00	Michael Griebel	*Sparse grids for higher-dimensional partial differential equations*
July 9	10:50-11:50	Konstantin Mischaikow	*Use of Computational Homology in Nonlinear Dynamics*

Schedule, Period III

Period 3: Workshops

1.18 Workshop 1: Foundations of Numerical PDEs

ORGANISERS: Christoph Schwab & Eitan Tadmor

Thursday, July 7: Room 11

Hour	Speaker	Title
13:50-14:35	B. Wohlmuth	*Locking-Free Finite Element Methods based on the Hu-Washizu Formulation for Linear and Geometrically Nonlinear Elasticity*
14:40-15:25	C. Makridakis	*Mesh Adaptivity and Artificial Diffusion in Hyperbolic Problems*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	R. Nochetto	*Finite Element Methods for Moving Surfaces and Applications to Stressed Epitaxial Films, Shape Optimization, and Image Processing*
16:50-17:35	J. Melenk	*Boundary Concentrated FEM*
17:40-18:25	T. Tang (Semi-Plenary)	*Moving Mesh Methods for Computational Fluid Dynamics*

Friday, July 8: Room 11

Hour	Speaker	Title
13:50-14:35	F. Brezzi (Semi-Plenary)	*Mimetic Finite Differences Methods for Diffusion Problems*
14:40-15:25	A. Kurganov	*Central-Upwind Schemes for Balance Laws. Applications to Multifluid and Multiphase Computations*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	S. Christiansen	*On Constraint Preservation in Finite Element Discretizations of Yang-Mills Equations*
16:50-17:35	J. Balbas	*MHD Equations, the div(B) Constraint and Central Schemes*
17:40-18:25	R. Donat	*Two-sided Generalized Riemann solvers: Advantages and Shortcomings*

Saturday, July 9: Room 11

Hour	Speaker	Title
13:50-14:35	G. Russo	*High Order Finite Volume Schemes for Balance Laws with Stiff Source*
14:40-15:25	R. LeVeque (Semi-Plenary)	*High-Resolution Finite Volume Methods and Approximate Riemann Solvers for Hyperbolic Systems*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	C. Le Bris	*Computational Chemistry*

1.19 Workshop 7: Special Session on Approximation Theory

ORGANISERS: M.D. Buhmann & J.M. Peña

Thursday, July 7: Room 12

Hour	Speaker	Title
13:50-14:40	F. Marcellán (Semi-Plenary)	*Logarithmic asymptotic of contracted Sobolev orthogonal polynomials on the real line*
14:40-15:05	J. Sayas	*Triangulations of spherical polygons and applications*
15:05-15:30	S. DeMarchi	*Interpolation points and interpolation formulae on the square*
15:30-16:00	TEA BREAK & Posters	
16:00-16:25	K. Kopotun	*Constrained spline approximation: back to basics*
16:25-16:50	J. Tanner	*Resolution of Gibbs' phenomenon, from global to semi-global*
16:50-17:15	T. Sauer	*Efficient reduction*
17:15-17:40	E. Mainar	*Multivariate Bernstein bases and evaluation algorithms in barycentric coordinates*
17:40-18:05	T. Goodman	*General uncertainty principles and signal recovery*
18:05-18:30	M.L. Mazure	*On Chebyshevian subdivision schemes*

Friday, July 8: Room 12

Hour	Speaker	Title
13:50-14:15	P. Sablonniere	*Bivariate spline quasi-interpolating projectors on a uniform three-direction mesh*
14:15-14:40	G. López	*Simultaneous Fourier-Pade approximation of Angelesco systems*
14:40-15:30	U. Reif (Semi-Plenary)	*Stability of B-splines on bounded domains*
15:30-16:00	TEA BREAK & Posters	
16:00-16:25	D. Leviatan	*Shape preserving widths of s-monotone functions*
16:25-16:50	A. Torokhti	*Best order approximation of random data*
16:50-17:15	J.M. Carnicer	*Classification of planar nodal sets satisfying a geometric characterization*
17:15-17:40	D. Dimitrov	*Extremal trigonometric and univalent polynomials*

Saturday, July 9: Room 12

Hour	Speaker	Title
13:50-14:15	B. Baxter	*Compactly supported radial basis functions and spherical averaging*
14:15-14:40	O. Davydov	*On the Error of Local RBF approximation of Scattered Data*
14:40-15:05	H. Wendland	*Sobolev error estimates for scattered data interpolation via RBFs*
15:05-15:30	J. Levesley	*How big can a smooth function get if it is zero on an h-spaced set*
15:30-16:00	TEA BREAK & Posters	
16:00-16:50	G. Plonka (Semi-Plenary)	*T Nonlinear Diffusion and Wavelet Shrinkage in Signal Processing*
16:50-17:15	J. Muñoz-Delgado	TBA

1.20 Workshop 9: Computational number theory

ORGANISERS: A. Lauder & J. Pila

Thursday, July 7: Room 13

Hour	Speaker	Title
13:50-14:35	F. Vercauteren	*The discrete logarithm problem on algebraic tori*
14:40-15:25	S.D. Galbraith (Semi-Plenary)	*Applications of pairings in cryptography*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	A. Lauder	*Effective p-adic estimates in rigid cohomology*
	J. Suzuki	*Generalizing Kedlaya's order counting based on Miura theory*
16:50-17:15	H. Hubrechts	*Deformation and the cohomology of Monsky and Washnitzer*

Friday, July 8: Room 13

Hour	Speaker	Title
13:50-14:35	N. Kayal	*Solvability of a system of polynomial equations over a finite field*
14:35-15:25	M.A. Gómez-Molleda	*Explicit determination of the dihedral Galois group of irreducible polynomials*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	D.J. Bernstein (Semi-Plenary)	*Integer factorization: a progress report*

Saturday, July 9: Room 13

Hour	Speaker	Title
13:50-14:35	F. Peherstorfer	*TBA*
14:35-15:25	O. Kihel	*Perfect powers having equal digits but one*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	M. Rubinstein	*Computations with L-functions associated to Hecke eigenforms*
16:50-17:35	R. Slezeviciene & J. Steuding (Semi-Plenary)	*The Riemann zeta-function – an atlas of the real world –*

1.21 Workshop 11: Numerical Linear Algebra

ORGANISERS: L. Reichel & S. Vavasis

Thursday, July 7: Room 14

Hour	Speaker	Title
13:50-14:35	P.-A. Absil	*Model-based methods for computing extreme eigenpairs of definite matrix pencils*
	G. Hechme	*Computing Reducing Subspaces for the Discretized Navier-Stokes Model*
14.40-15:25	A. Sidi	*Approximation of Largest Eigenpairs of Matrices and Applications to PageRank Computation*
	S. Noschese	*Eigenvalue patterned condition numbers: Toeplitz and Hankel cases*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	V. Olshevsky (Semi-Plenary)	*Structured matrices in Control, Filtering and Eigenvalue Problems*
16:50-17:35	S. Graillat	*Structured Perturbations in Scalar Product Spaces*
	P. Koev	*Accurate Eigenvalue and QR Decompositions of Totally Positive Matrices*
17:40-18.25	L. Cvetkovic	*Contribution to the H-matrix theory and eigenvalue localization*
	V. Pan	*Accurate solution of the classical and polynomial eigenproblems*

Friday, July 8: Room 14

Hour	Speaker	Title
	A. Torokhti	*Method of block-triangular partition of band matrix in constructing best estimators*
13:50-14:35	K. Hayami	*GMRES Methods for Least Squares Problems*
	N. Stylianopoulos	*Optimal semi-iterative methods for complex SOR with tools from potential theory*
14:40-15:25	E. Zhebel	*A Multigrid Method for Structured Matrices*
15:30-16:00	TEA BREAK & Posters	
	H. De Sterck	*Optimal Order Parallel Algebraic Multigrid Preconditioners*
16:00-16:45	M. Eiermann	*A Restarted Krylov Subspace Method for the Efficient Evaluation of Matrix Functions*
16:50-17:35	S. Toledo (Semi-Plenary)	*How Hyper is your Graph? On the Factor-Width of Matrices*
	S. Chandrasekaran	*HSS matrices and bounded condition number discretizations of PDEs*
17:40-18:25	M. Bueno	*Darboux transformation with shift: Stability and sensitivity analysis*

Saturday, July 9: Room 14

Hour	Speaker	Title
	F. Dopico	Accurate symmetric rank revealing factorizations of some structured matrices
13:50-14:35	L. Reichel	*Tikhonov regularization and orthogonal polynomials*
	P. Guerrero-García	*Updating and downdating an upper trapezoidal sparse orthogonal factorization*
14:40-15:25	G. Heinig	*TBA*
15:30-16:00	TEA BREAK & Posters	
	J. Martínez	*Interpolation in the bivariate tensor-product Bernstein basis and applications to CAGD*
16.00-16:45	A. Salam	*Symplectic Householder Transformations, a geometric and algebraic approach*
	S. Vavasis	*Solving Elliptic Finite Element Systems in Near-Linear Time with Support Preconditioners*
16:50-17:35	M. Van Barel	*Structures preserved by the QR-algorithm*
17:40-18.25	D. Bini (Semi-Plenary)	*Solving structured Markov chains: numerical methods and open problems*

1.22 Workshop 13: Real-number complexity

ORGANISERS: Peter Bürgisser & Gregorio Malajovich

Thursday, July 7: Room 15

Hour	Speaker	Title
13:50-14:25	V. Pan	*Polynomial root-finding with matrix eigen-solving*
14:30-15:25	J.-P. Dedieu	TBA
	G. Villard	TBA
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	J.L. Montaña	*On the number of random digits required in the Monte Carlo integration of definable functions.*
	M. Braverman	*On efficient computation of parabolic Julia sets.*
16:50-17:35	G. Malajovich (Semi-Plenary)	*On the Curvature of the Central Path of Linear Programming Theory.*

Friday, July 8: Room 15

Hour	Speaker	Title
13:50-14:25	P. Bürgisser	*Counting Complexity and Euler Characteristic of Semialgebraic Sets.*
	S. Basu	*Efficient Algorithms for Computing the Betti Numbers of Semi-algebraic Sets.*
14:30-15:25	K. Meer	*Probabilistically checkable proofs over the reals.*
	L. Blum	TBA
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	M. Wschebor	*Random systems of equations and the Rice formulae.*
	G. Malod	*A uniform version of Valiant's algebraic complexity classes.*
16:50-17:35	P. Koiran	*Some connections between the Blum-Shub-Smale and generalizations of Valiant's model.*
17:40-18:25	F. Cucker (Semi-Plenary)	*Exotic quantifiers, complexity classes and complete problems.*

Saturday, July 9: Room 15

Hour	Speaker	Title
13:50-14:25	Jan Verschelde (Semi-Plenary)	*Software for Symbolic-Numeric Solutions of Polynomial Systems*
14:30-15:25	J.M. Rojas	*Parallels between Real and p-adic Complexity.*
	Y. Yomdin	*Analytic reparametrizaton of algebraic sets as a tool for their computer modelling.*
15:30-16:00	TEA BREAK & Posters	
16:00-16:45	G. Matera	*On the approximation of the stationary solutions of certain semilinear parabolic PDEs.*
	J.-C. Yakoubsohn	*Kantorovitch analysis for multiple zeros of univariate analytic functions.*

1.23 Workshop 14: Computational dynamics

ORGANISERS: Jean-Pierre Ramis, Carles Simó & Warwick Tucker

Thursday, July 7: Room 16

Hour	Speaker	Title
13:50-14:10	D. Stoffer	*Transversal homoclinic points of the Hénon map*
14.15-14.35	M.A. Barkatou	*On Exponential Parts of Solutions of a Linear Differential System*
14:40-15:25	O. Junge	*On the macroscopic dynamics of randomly perturbed conservative maps*
15:30-16:00	TEA BREAK & Posters	
16:00-15:45	K.J. Palmer	*Transversal Connecting Orbits from Shadowing*
16:50-17.35	A. Jorba	*On the fractalization of invariant curves in quasi-periodically forced 1-D maps*
17:40-18:25	M. Berz (Semi-Plenary)	*Validated Integration of ODEs and PDEs with Taylor Model-based Tools*

Friday, July 8: Room 16

Hour	Speaker	Title
13:50-14.35	A. Haro (Semi-Plenary)	*Invariant manifolds in quasi-periodic systems: theory, computation and applications*
14:40-15:25	M. Petkov	*Hypergeometric Solutions of Linear Difference Equations with Hypergeometric Coefficients*
15:30-16:00	TEA BREAK & Posters	
16:00-15:45	M. Yampolsky	*Non-computable quadratic Julia sets*
16:50-17.35	P. Zgliczynski	*Rigorous Numerics for Dissipative PDEs*
17:40-18:25	K. Makino	*Validated Integration of ODEs and PDEs with Taylor Model-based Tools*

Saturday, July 9: Room 16

Hour	Speaker	Title
13:50-14:10	S. Luzzatto	*Computable conditions for the verification of chaos in one-dimensional dynamics*
14.15-14.35	T. Kapela	*Non-symmetric choreographies in the N-body problem*
14:40-15:25	J.A. Weil (Semi-Plenary)	*About the Galoisian approach to the non-integrability of (Hamiltonian) differential systems*
15:30-16:00	TEA BREAK & Posters	
16:00-15:45	R. de la Llave	*Invariant manifolds in quasi-periodic systems: theory, computation and applications*
16:50-17.35	A. Vladimirsky	*The PDE approach for approximating invariant manifolds*
17:40-18:25	F. Ulmer	*Discussion of a parametrized first order linear system of Lame type*

1.24 Workshop 17: Stochastic computation

ORGANISERS: Brad Baxter & Thomas Müller-Gronbach

Thursday, July 7: Room *Salón de Grados*

Hour	Speaker	Title
13:50-14:35	K. Ritter (Semi-Plenary)	*On the complexity of solving stochastic differential equations*
14.40-15.25	A. Neuenkirch	*Stochastic Differential Equations with Additive Fractional Noise: Approximation at a Single Point*
15:30-16:00	TEA BREAK & Posters	
16:00-15:45	R. Hauser	*Approximation to the Mean Curve of Longest Common Subsequences*
16:50-17.35	E. Buckwar	*Linear multi-step methods for SDEs*
17:40-18:25	R. Winkler	*Linear multi-step methods for SDEs*

Friday, July 8: Room *Salón de Grados*

Hour	Speaker	Title
13:50-14.35	B. Baxter	*Exponential Brownian Motion and Divided Differences*
14:40-15:25	S. Dereich (Semi-Plenary)	*High resolution coding of stochastic processes*
15:30-16:00	TEA BREAK & Posters	
16:00-15:45	D. Dean	*A Physicist's Perspective on Optimization Problems*
16:50-17.35	T. Nye	TBA

Saturday, July 9: Room *Salón de Grados*

Hour	Speaker	Title
13.50-14.35	J. Creutzig	TBA
14:40-15:25	H. Pfeiffer	*Monte Carlo Methods with Few Random Bits for Integration and Integral Equations*
15:30-16:00	TEA BREAK & Posters	
16:00-15:45	W. Gilks (Semi-Plenary)	TBA
16:50-17.35	R. Brummelhuis	*Exponential Brownian Motion and Divided Differences*