



Belgian Mathematical Society

Comité National de Mathématique CNM

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NCW Nationaal Comité voor Wiskunde

**BMS-NCM NEWS: the newsletter of the
Belgian Mathematical Society and the
National Committee for Mathematics**

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BMS-NCM NEWS

No 33, May 15, 2001

2001 BMS-DMV Meeting

FIRST JOINT MEETING OF THE BELGIAN (BMS) AND GERMAN (DMV) MATHEMATICAL SOCIETIES

PROGRAMME

Friday June 8

- 11.30 - 13.30: Registration
13.45 - 14.00: Opening Ceremony
14h00 - 15h00: Plenary Lecture 1
I. Daubechies *Mathematical problems suggested by Analog-to-Digital conversion*
15h00 - 16h00: Plenary Lecture 2
D. Vogt *The space of real analytic functions has no basis*
16.00 - 16.30: Coffee/tea (and registration)
16.30 - 19.00: Special Sessions part I

Algebraic Topology

- 16.30 - 17.20: **U. Kaiser** *Jones type invariants and the topology of 3-manifolds*
17.30 - 17.55: **D. Chataur** *Deformations of the singular cochain algebra*
18.00 - 18.25: **P.-E. Parent** *Localisation and colocalisation*
18.30 - 18.55: **P. Ghienne** *On the Mislin genus*

Arithmetic Geometry

- 16.30 - 17.20: **J.-P. Tignol** *Multipliers of similitudes*
17.30 - 18.20: **A. Herremans** *A combinatorial version of Serre's conjecture on modular Galois representations*

Functional Analysis and Functional analytic Methods in Partial Differential Equations

- 16.30 - 16.55: **C. Finet** *Numerical Index*
 17.00 - 17.25: **C. Michels** *Eigenvalue estimates for operators and matrices*
 17.00 - 17.25: **S. Jaffard** *Beyond Besov spaces*
 17.30 - 17.55: **T. Kuehn** *Entropy Numbers of Sequence Space Embeddings, and Applications to Function Spaces*
 17.30 - 17.55: **A. Kunoth** *Wavelet Methods for Elliptic Boundary Value Problems and Control Problems*
 18.00 - 18.25: **J.-P. Gossez** *Asymmetric elliptic problems with indefinite weights*
 18.00 - 18.25: **A. Cohen** *Harmonic Analysis of the space BV*
 18.30 - 18.55: **D. Smets** *Symmetry breaking for ground states of the Henon and Hardy-Sobolev equations*
 18.30 - 18.55: **S. Dispa** *Intrinsic definitions of Besov spaces on domains*

Global Analysis

- 16.30 - 17.20: **M. Bertelson** *A h-principle for regular Poisson structures*
 17.30 - 18.20: **P. Lecomte** *Towards projectively equivariant quantizations*

Session Optimization

- 16.30 - 17.20: **Rendl** *Nonlinear methods in combinatorial optimization*
 17.30 - 17.55: **Ben-Tal** *Robust solutions of uncertain quadratic optimization problems*
 18.00 - 18.25: **Leyffer** *How the Grinch solved MPECs - Mathematical Programs with Equilibrium Constraints*
 18.30 - 18.55: **Orban** *Componentwise fast convergence in the solution of full-rank systems of nonlinear equations*

Ordinary Differential Equations and Dynamical Systems

- 16.30 - 17.15: **R.Roussarie** *Zeros of Abelian Integrals and Limit Cycles*
 17.30 - 18.15: **D. Bonheure** *Periodic solutions of forced isochronous oscillators at resonance*
 18.15 - 19.00: **M.Caubergh** *A local study of limit cycles in analytic families of planar vector*

Representation Theory

- 16.30 - 17.20: **H. Lenzing** *Hereditary noetherian categories with a commutative function field*
 17.30 - 18.20: **V. Mazorchuk** *Twisted Generalized Weyl algebras*

Topological Geometry

- 16.30 - 17.20: **J. Thas** *Circle geometries and generalized quadrangles*
 17.30 - 17.55: **A. Wich** *Non-embeddability of a stable plane and its consequences*
 18.00 - 18.25: **N. Rosehr** *Stable graphs - a generalization of compact polygons and stable planes*
 18.30 - 18.55: **E. Govaert** *Forgetful Polygons*

Saturday June 9

- 08.00 - 09.00: Registration
 09h00 - 10h00: Plenary Lecture 3
H. Van Maldeghem *Buildings: skyscrapers in the cities of incidence geometry and groups*
 10h00 - 11h00: Plenary Lecture 4
P. Deuffhard *Metastable conformations in computational drug design*
 11.00 - 11.30: Coffee/Tea
 11h30 - 12h30: Plenary Lecture 5
M. Goemans *Complex semidefinite programming for approximating combinatorial optimization problems*
 Lunch
 14.00 - 19.00: Special Sessions part II

Algebraic Topology

- 14h00 - 14h50: **J.-C. Thomas** *Steenrod operations and Hochschild homology*
 15h00 - 15h25: **J. Scott** *A p-local Milnor-Moore theorem for loop space homology modulo torsion*
 15h30 - 15h55: **H. Biller** *Proper actions on rational cohomology manifolds*
 16h30 - 17h20: **M. Heusener** *Regenerating singular hyperbolic structures from Sol*

17h30 - 17h 55: **L. Vandembroucq** *Fibrewise suspension and L.-S. category (ok)*

18h00 - 18h50: **P. Lambrechts** *The homotopy type of the complement of a subpolyhedron in a manifold*

Arithmetic Geometry

14.00 - 14.50: **J. Denef** *A Thom-Sebastiani formula for motivic zeta functions*

15.00 - 15.50: **C. Consani** *Arithmetic on a quintic threefold*

16.30 - 17.20: **A. Schmidt** *Tame class field theory of arithmetic schemes*

17.30 - 18.20: **M. Spiess** *p-adic uniformization and p-adic L-functions of modular forms*

Functional Analysis and Functional analytic Methods in Partial Differential Equations

14.00 - 14.25: **P. Paul** *Properties of generalized Toeplitz operators*

14.30 - 14.55: **L. Narici** *An Open Mapping Theorem for Basis Separating Maps*

15.00 - 15.25: **O. Gilson** *Quasi-optimal convergence using interpolation by non-uniform deficient splines*

15.30 - 15.55: **W. Werner** *Asymptotic Expansion of the Heat Kernel and Functional Calculus*

16.00 Break

16.30 - 16.55: **M. Langenbruch** *Surjective partial differential operators on spaces of real analytic functions*

17.00 - 17.25: **E. Schrohe** *Elliptic Differential Operators on Manifolds with Conical Singularities*

17.30 - 17.55: **P. Godin** *Blow-up of solutions of semilinear hyperbolic equations in one space dimension*

17.30 - 17.55: **K. Sadarangani** *Relations between the strong subdifferentiability of a norm and the locally nearly uniformly convex spaces*

18.00 - 18.25: **P.C. Kunstmann** *Weighted norm estimates and maximal L_p -regularity*

18.00 - 18.25: **S. Falcon** *A note on a theorem of Tacon*

18.30 - 18.55: **K. Floret** *Natural norms on symmetric tensor products of Banach spaces*

18.30 - 18.55: **O.P. Misra** *The Applications of Schwartz Distributions*

Global Analysis

14.00 - 14.50: **D. Schueth** *Isospectral Lie groups and isospectral spheres*

15.00 - 15.50: **J.-M. Schlenker** *Boundary conditions for the construction of hyperbolic metrics.*

16.00 - 16.30: Coffee/Tea

16.30 - 17.20: **R.S. Krausshar** *Monogenic generalized trigonometric and elliptic functions in Clifford analysis*

Session Optimization

14.00 - 14.50: **R. Weismantel** *Primal Integer Programming*

15.00 - 15.55: **Q. Louveaux** *Combining problem structure and basis reduction to solve a class of hard integer programs*

15.30 - 15.55: **S. Albers** *Online Algorithms*

16.00 - 16.30: Coffee/Tea

16.30 - 17.20: **Y. Nesterov** *Augmented self-concordant barriers and nonlinear optimization problems with finite complexity*

17.30 - 17.55: **F. Glineur** *A conic approach for separable convex optimization*

18.00 - 18.25: **J.-J. Ruckmann** *On Generalized Semi-Infinite Optimization Problems*

18.00 - 18.25: **Van Nuffelen** *An upperbound for the independence and covering number, in terms of eigenvalues*

18.30 - 18.55: **R. Schultz** *Models and Algorithms in Stochastic Integer Programming*

18.30 - 18.55: **K. Thas** *Old and new results on the union-closed sets conjecture*

Ordinary Differential Equations and Dynamical Systems

14.00 - 14.45: **S. Walcher** *Nonlinear symmetries of plane polynomial differential equations*

15.00 - 15.45: **F. Wagener** *Low order normal resonances in quasi-periodically forced systems*

16.30 - 17.15: **H. Kokubu** *Lorenz-like dynamics in a Lorenz-like family*

17.30 - 18.15: **P. Giesl** *On the characterization of the basin of attraction of limit cycles*

18.15 - 19.00: **P. De Maesschalck** *Gevrey asymptotics of singularly perturbed vector fields in the blowup space*

Representation Theory

14.00 - 14.50: **R. Bocklandt** *Coregular Quiver representations*

15.00 - 15.50: **E. Jespers** *Subgroups of the unit group of group rings*

16.00 - 16.30: Coffee/Tea

16.30 - 17.20: **A.-M. Simon** *A Property of Finite Free Resolutions Related to Auslander's delta-invariant and Hochster Canonical Element Conjecture*

17.30 - 18.20: **P. Casati** *The algebraic structure of α -stratified modules*

Topological Geometry

14.00 - 14.50: **H. Haehl** *Compact connected topological planes and their classification by automorphism groups*

15.00 - 15.25: **H. Loewe** *Noncompact groups acting on topological translation planes*

15.30 - 15.55: **G. Gerlich** *Representation of two-dimensional stable planes by Riemannian metrics and affine connections*

16.00 - 16.30: Coffee/Tea

16.30 - 16.55: **M. Stroppel** : *Semigroup actions on topological planes*

17.00 - 17.25: **T. De Medts** *Automorphism groups of Moufang polygons*

17.30 - 17.55: **B. Muehlherr** *Locally Topological Twin Buildings*

20.00: Banquet at the Colonster Castel

Sunday, June 10

09.30 - 11.30 Special Sessions, part III

Algebraic Topology

09h00 - 09h50: **A. Zastrow** *On recent developments and concepts in the algebraic topology of non-tame spaces*

10h00 - 10h25: **B. Richter** *An Atiyah-Hirzebruch spectral sequence for topological André-Quillen homology*

10h30 - 10h55: **R. Kieboom** *Fibrations of bigroupoids and applications in algebra and topology*

Arithmetic Geometry

09.30 - 10.20: bf F. Gardeyn *Models of τ -sheaves, t -adic Galois representations and uniformization of t -motives.*

10.30 - 11.20: **T. Wedhorn** *Stratifications of Reductions of Shimura Varieties*

Functional Analysis and Functional analytic Methods in Partial Differential Equations

09.30 - 09.55: **S. Dierolf** *An Elementary Approach to Locally Convex Operator Spaces*

10.00 - 10.25: **J. Wengenroth** *The derived functors of Hom in the category of locally convex spaces*

10.30 - 10.55: **M. Mauer** *Domains of analyticity and domains of analytic existence in real locally convex spaces*

11.00 - 11.25: **J. Bonet** *Weakly compact composition operators between vector valued weighted spaces of holomorphic functions*

Global Analysis

09:30 - 10:20: **I. Kath** *Parallel Spinors and Holonomy*

10:30 - 11:20: **L. Schwachhoefer** *Manifolds with almost non-negative curvature*

Session Optimization

09.30 - 10.20: **M. Labbe** *On the generalized minimum spanning tree problem*

10.30 - 10.55: **K. Jansen** *Polynomial-time Approximation Algorithms for Preemptive Resource Constrained Scheduling and Fractional Graph Coloring.*

11.00 - 11.25 **Z. Szigeti** *Detachments preserving local edge-connectivity of graphs*

Ordinary Differential Equations and Dynamical Systems

09.30 - 10.15: **J.Rocha** *Solvability of some integral equations of type Volterra-Stieltjes and their applications*

10.30 - 11.15: **M.Willem** *Least energy solutions of a critical Neumann problem with a weight*

Topological Geometry

09.00 - 09.50: **L. Kramer** *Isoparametric submanifolds and buildings*

10.00 - 10.25: **M. Wolfrom** *Point homogeneous polygons with positive Euler-Poincaré characteristic*

10.30 - 10.55: **Ph. Cara** *Independent sets and RWPRI incidence geometries*

11.00 - 11.25: **A. Devillers** *Ultrahomogeneous structures: some infinite examples*

11.30 - 11.45: Coffee/Tea

11.45 - 12.45: Plenary Lecture 6

C. Deninger *Foliations and number theory*

A booklet with the abstracts of the talks can be downloaded on the home page of the meeting

<http://math-www.uni-paderborn.de/Liege2001/>

These abstracts are also available on line at

<http://at.yorku.ca/cgi-bin/amca/cafv-01>

For detailed information on the meeting (accommodation, hotels, useful adresses, ...) see:

- Issue #31 of BMS-NCM NEWS (January 15, 2001)
- The homepages:

<http://math-www.uni-paderborn.de/Liege2001/>
<http://www.ulg.ac.be/sectmath/DMVSMBMain.html>

which will be updated and which will contain some useful links.

LOCAL ORGANIZING COMMITTEE:

F. Bastin, J. Schmets (both Univ. Liège).

We look forward to seeing you at the meeting in Liège.

For the BMS and the DMV:

Klaus D. Bierstedt, Jean Schmets

M@th en ligne

The **M@th en ligne** team (Pierre Lecomte, Fabien Boniver, Samuel Nicolay and Michel Rigo) are happy to announce the creation of the internet site **M@th en ligne**

<http://www.forum.math.ulg.ac.be>

It is intended for those who have interest or difficulties in mathematics. The purpose of the site is to promote exchange of information, questions and answers dealing with mathematics.

A broader presentation is available at the following address

<http://www.ulg.ac.be/presse/communiques/mathforum030401.pdf>

Grants available for the EMS-SIAM meeting in Berlin 2-6 September 2001

The EU will support the 1st EMS-SIAM conference with 44,000 euro to give grants to young researchers from EU and associated states. EMS is paying 3,000 euro for the ones from Eastern Europe, who do not belong to associated states.

For further information visit the web site of the conference

<http://www.zib.de/amcw01/>

at the section **Registration**

The Bologna Declaration

The Bologna Declaration, signed in June 1999, is intended to be a step towards the creation of a “European higher education space”. The 29 signatories, including all the EU countries, have set the following objectives to be attained by 2010:

- the adoption of a system of comparable degrees and the use of the Diploma Supplement.
- the adoption of a system based on two cycles, undergraduate and postgraduate. Access to the second cycle shall require successful completion of first cycle studies, lasting a minimum of three years. The degree awarded after the first cycle shall also be relevant to the European labour market as an appropriate level of qualification. The second cycle should lead to the master and/or doctorate degrees as in many European countries.
- the establishment of a system of credits as a proper means of promoting student mobility, but also covering lifelong learning
- other measures to promote mobility both of students and of staff
- the promotion of European cooperation in quality assurance
- the promotion of the European dimension in higher education generally

Concern has been expressed that countries are shortening the length of first degree programmes to make three years a norm, rather than a minimum.

Further, the commitment to make the first degree relevant to employment seems to have been entered into without consideration of what this means for the academic content of the degree.

The Belgian Mathematical Society would like to know the response of the belgian mathematical community to the Bologna Declaration and its implications, and hopes to initiate some discussion of this issue.

The text of the Bologna Declaration together with

- a comment on the meaning and significance of the Bologna Declaration and information on the follow-up process in progress;
- a list of internet addresses from which more detailed information can be obtained,

is available at

<http://www.crue.upm.es/eurec/bolognaexplanation.htm>

Third International Workshop on “TLS and Errors-in-Variables Modeling” August 27-29, 2001

This interdisciplinary workshop is a continuation of 2 previous workshops which were held in Leuven, Belgium, August 1991 and 1996, and aims to bring together numerical analysts, statisticians, engineers, economists, chemists, etc. in order to discuss recent advances in Total Least Squares (TLS) techniques and errors-in-variables modeling.

The workshop is partly sponsored by the Fund for Scientific Research Flanders (FWO), the European Association for Signal Processing (EURASIP), and the Scientific Research Community on numerical methods for mathematical modelling of FWO-Flanders.

Workshop Secretariat Ida Tassens Dept. Electrical Engineering, ESAT/SISTA-COSIC Katholieke Universiteit Leuven Kasteelpark Arenberg 10 3001 Leuven-Heverlee, Belgium
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Publications The final program and Book of Abstracts will be distributed at the time of the Workshop. Kluwer Academic Publishers agreed to publish the accepted full papers in a book, entitled : Total Least Squares and Errors-in-Variables Modeling: Analysis, Algorithms and Applications. This book should appear soon after the workshop.

Venue Hotel Information The workshop will be held in the Arenberg Castle of the Katholieke Universiteit Leuven. Transportation from Brussels International Airport to Leuven will be organized on Sunday August 26, 2001.

A block of dormitory rooms on campus with hotel service has been reserved for participants, as well as a limited number of rooms in the Begijnhof Congres Hotel and Hotel New Damshire (15 minutes walking distance

from the workshop site) and will be held until May 31, 2001. After that date, reservations will depend upon availability.

For further information, see the home page of the meeting at

<http://www.esat.kuleuven.ac.be/sista/tls3.html>

Short Course on CFD at von Karman Institute

NATO-RTO/NASA/VKI Short Course

“Error Estimation and Solution Adaptive Discretization in CFD”

Overview

As computational fluid dynamics (CFD) is applied to ever more demanding fluid flow problems, the tasks of (1) computing numerical fluid flow solutions to a user specified tolerance and (2) quantitative assessment of existing numerical fluid flow solutions have become paramount in the development of complex fluid dynamical systems.

The goal of the NATO Research and Technology Office (RTO) sponsored lecture series is to provide a series of comprehensive lectures by leading experts discussing recent advances and technical progress in the area of numerical error estimation and adaptive discretization methods with specific emphasis on computational fluid dynamics. The lectures are intended to accommodate attendees of both novice and advanced levels of technical expertise.

The week long lecture series will be given at NASA Ames in the United States and repeated later at the von Karman Institute in Belgium. Online registration forms and hotel/travel information is available at the WEB locations given below. Detailed lecture notes will be available to attendees at the time of the lecture series.

Course Lecturers and Topics

- Marshall Bern (Xerox PARC, USA): Delaunay triangulation, subdivision surfaces, computational geometry, optimal triangulations, adaptive refinement, mesh improvement
- Mike Giles and Endre Suli (Oxford University, UK): Introduction to a posteriori error estimation, Giles/Pierce theory, stabilized FEM for hyperbolic problems, a posteriori error analysis for *hp* FEM
- Claes Johnson (Chalmers University, Sweden): Adaptive FEM for fluid flow, model adaptivity, multi-adaptive space-time solvers
- Jaime Peraire and Anthony Patera (MIT, USA): Implicit A-posteriori computation of bounds, “Energy” norms and outputs of interest, constrained minimization formulations, computation of bounds using inexpensive relaxations
- Serge Prudhomme (University of Texas at Austin, USA): “Goal oriented” error estimation and adaptation, a posteriori error estimation, *hp* FEM, stability and error control, solution adaptivity

First location

September 10-14, 2001

NASA Ames Research Center, Moffett Field, California, USA

Online Registration Available:

<http://www.nas.nasa.gov/Services/Training>

Registration DEADLINE: Aug. 31, 2001

NASA Ames Course Administrator: Marcia Redmond, mredmond@mail.arc.nasa.gov (650)604-4373

Second location

October 15-19, 2001

von Karman Institute for Fluid Dynamics, Rhode-Saint-Genese, Belgium

Online Registration Available:

<http://www.vki.ac.be> (click “lecture series”)

Registration DEADLINE: Oct. 1, 2001 VKI Course Administrator: Carine Buyse, secretariat@vki.ac.be (+32 23599604)

Lecture Series Directors and Technical Contacts

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VUB - Faculteit Toegepaste Wetenschappen - Te begeven betrekking

De VRIJE UNIVERSITEIT BRUSSEL meldt de externe vacature voor een mandaat van:

Voltijds Assistent

Ingangsdatum: 1 september 2001

Duur: 2 jaar (hernieuwbaar)

Omschrijving van de opdracht:

Onderwijs : Begeleiding van oefeningen voor de vakken “analyse” en/of “lineaire algebra” in de eerste en tweede kandidatuur burgerlijk ingenieur en burgerlijk ingenieur-architect

Onderzoek : in de algebra of een aanverwant domein.

De kandidaturen worden ingewacht: 1 maand na publicatie in het Belgisch Staatsblad.

Vereisten : licentiaat wiskunde, licentiaat natuurkunde of burgerlijk ingenieur.

Kontaktpersoon : Prof. S. Caenepeel: tel. : 02/629.29.08, secr. : 02/629.27.69, e-mail: scaenepe@vub.ac.be

De kandidaten worden verzocht gebruik te maken van het daartoe bestemde kandidaatstellingsformulier met verklaring vrij onderzoek en cumulatief formulier dat kan gedownload worden op het internetadres

<http://www.vub.ac.be/DP/AP.html> of bekomen worden op het secretariaat van de desbetreffende faculteit of op de Dienst Academisch Personeel (tel: 02/629.22.65) van de Vrije Universiteit Brussel, Pleinlaan 2 te 1050 Brussel.

Eén ingevuld kandidaatstellingsformulier, dient gericht te worden aan de Rector van de Vrije Universiteit Brussel. Eén kopie van het kandidaatstellingsformulier vergezeld van een kopie van de documenten en eventuele publicaties, dient gelijktijdig gericht te worden aan de Decaan van de Faculteit.
