BELGIAN MATHEMATICAL SOCIETY

Comité National de Mathématique CNM

C W M
N

NCW Nationaal Comite 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 52, March 15, 2005

Letter from the editor

Welcome to the new members!

Welcome to each of you!

As a member of the BMS for 2005, you will receive this Newsletter on May 15, September 15, November 15 and also a special issue in August (see below— new event: PhD-Day!)

All members are strongly encouraged to send[1] *their experience concerning novels around maths and other any cultural event that could be of interest for mathematicians (as an example see section "fiction"), hence to make this Newsletter more and more attractive!*

Françoise Bastin

Contents

[1] To Françoise Bastin, F.Bastin@ulg.ac.be

1 News from the NCM

Dear Member of the National Committee of Mathematics,

At its last meeting on January 19, the Committee has decided that its next meeting will take place on Wednesday October 19 at 14:30 at the Palace of the Academies. The agenda will be sent in due time. The meeting will start with a survey talk by Hendrik Van Maldeghem, open to all interested mathematician.

I am looking forward to meeting you. With my best wishes,

Jean Schmets, President.

2 News from the BMS

During the last meeting of the BMS Committee (January 15, 2005), among others, the following items were discussed.

1. *Addresses for the BMS*

   Please notice the change in the addresses of the BMS at the University of Antwerp and of the web pages

   bms@mail.win.ua.ac.be http://bms.ulb.ac.be

2. *Membership and visibility of the BMS*

   The following have been prepared: posters, letters membership dues, awareness policy (follow-up), leaflet.

3. *Mathematical Congress: University of Gent, May 2005*

   For any information around the Mathematical Congress of 2005 which will take place in Gent on Friday May 20, Saturday May 21, and Sunday May 22 2005 see

   http://cage.ugent.be/bnlf/

   It is a joint meeting of the Belgian (BMS), Dutch (KWG) and French (SMF) mathematical societies.

4. *PhD-Day*

   The Committee is installing a Working Committee charged with the organization of a meeting for PhD students.

5. *New Treasurer*

   The BMS should appoint a new treasurer as of May of this year. The suggestion to ask Guy Van Steen to be the new treasurer of the BMS was well received at the meeting. At the same time Guy Van Steen will replace F. Van Oystaeyen as member of the Executive Committee of the BMS.

6. *General meeting of the BMS*

   The General Assembly of the BMS is scheduled in Gent, on Saturday May 21 at 2 pm , during the joint Congress of the BMS, SMF, SML, and KWG.

3 Meetings, Conferences, Lectures

3.1 March, 2005

Talk on March 22, 2005, VUB

Dear Colleague,

Prof. Freddy Delbaen (ETHZ) will visit the VUB on Tuesday March 22-nd and he will present a lecture on invitation of the mathematics department:

L^∞ hedging for bounded claims and a theorem related to risk measures.

Time: 16u, Location: 10F734. Everybody is cordially invited! Eva Colebunders

Quantifications équivariantes et problèmes associés
Thursday March 24, 2005
Institut de Mathématique, ULg

Le groupe GEOTHALG de géométrie du Département de Mathématique de l'ULg (http://www.ulg.ac.be/geothalg) organise le jeudi 24 mars 2005, de 14h à 18h, un mini-colloque de géométrie différentielle intitulé *Quantifications équivariantes et problèmes associés*

Les orateurs sont
- Martin Bordemann (Université de Haute Alsace à Mulhouse),
- Simone Gutt (Université Libre de Bruxelles et Université de Metz),
- Valentin Ovsienko (Directeur de recherche au CNRS, Institut Girard Desargues à Lyon I) et
- Robert Wolak (Université Jagiellone à Cracovie).

Les exposés seront consacrés à des sujets concernant les méthodes de quantification, la géométrie symplectique et la théorie des feuilletages.

Pour tout renseignement complémentaire, contacter P. Lecomte (plecomte@ulg.ac.be)

Université de Liège, Département de Mathématique
Grande Traverse, 12 B37 (parking 32), 4000 Liège

Gesellschaft fuer Angewandte Mathematik und Mechanik
GAMM 2005 , March 28 - April 1
Luxembourg

Dear Colleague,
We like to draw your attention to the 76th Annual Meeting of the

Gesellschaft fuer Angewandte Mathematik und Mechanik
GAMM 2005 in Luxembourg, March 28 - April 1

(Society of Applied Mathematics and Mechancis, *http* : *//www.gamm−ev.de/english/Gamm_eng/gamm.htm*),
General information and online registration are available at http://www.uni.lu/GAMM2005. Do not forget to reserve a hotel room soon, since hotels will be booked out quickly because of the European presidency of Luxembourg in 2005.
We look forward to meeting you in Luxembourg! Kind regards,

Carine Molitor-Braun
(President of the Société Mathématique du Luxembourg and
member of the local organising committee of GAMM 2005)

3.2 April, 2005

Talk on April 22, 2005, UMH

Dear Colleague,
Le Professeur Gilles GODEFROY (Université Pierre et Marie Curie, Institut de Mathématiques de Jussieu, Équipe d'Analyse) fera une conférence intitulée

Le théorème de Baire, un centenaire en pleine forme

Time: 11.15, Location: salle 0A11 (Pentagone)
Accessible aux professeurs de mathématiques de tous niveaux, elle devrait aussi intéresser les étudiants de fin de licence ou de master, ainsi que les candidats à l'agrégation.

Résumé

L'apprentissage de l'analyse - en licence ou en classes préparatoires - est illustré de contre-exemples qui pourraient faire croire que cette partie des mathématiques est finalement une vaste pathologie, un zoo rempli de monstres. Mais grâce à Monsieur Baire (et à quelques autres), nous connaissons bien des résultats positifs. Nous verrons quelques uns d'entre eux, en laissant de côté les considérations techniques, afin que l'exposé reste accessible à des amateurs de mathématiques d'horizons divers.

Catherine Finet and Lucas Quarta

3.3 May, 2005

JOINT BeNeLuxFra CONFERENCE in MATHEMATICS

**JOINT MEETING OF THE
BELGIAN (BMS), DUTCH (KWG), LUXEMBOURG (SML) AND FRENCH (SMF)
MATHEMATICAL SOCIETIES**

May 20-22, 2005
University of Gent, Belgium

See the first announcement at the end of the November 2004 issue of the Newsletter and the new one at the end of *this* issue. Please remark that

deadline for registration is April 1, 2005

ADVANCED COURSE ON POLYTOPE CONSTRUCTIONS
Monday to Friday, May 23-27, 2005
U.L.B.

A one-week, advanced course will be delivered in Brussels, during next May.

Lecturers

- Prof. Günter M. Ziegler (TU Berlin), `http://www.math.tu-berlin.de/~ziegler/`
- Prof. Michael Joswig (TU Darmstadt), `http://www.math.tu-berlin.de/~joswig/`

Location
Université Libre de Bruxelles, Campus de la Plaine, http://www.ulb.ac.be/docs/campus/plaine.html

More information on the course contents is provided below.

The course is open to all people interested, although preliminary registration will be mandatory. To manifest your possible interest in future registration, please send a (short) e-mail to pleroy@ulb.ac.be

There will be no charge (except for tea and coffee breaks, and for possible course material), but no support is available.

The second announcement, sent in January to people having replied to this first announcement, contains more practical details and announces a deadline for registration.

Jean-Paul Doignon, doignon@ulb.ac.be
Département de Mathématiques, Université Libre de Bruxelles

More information

- Schedule: two morning lectures of 75 min starting at 9:30am. In the afternoon, exercise and problem sessions (including an introduction to the POLYMAKE software project) are conducted by Nikolaus Witte and/or Thilo Schröder (TU Berlin).
- Topics:
  3-dimensional polytopes, circle packings, proofs of Steinitz'Theorem.
  Deformed products and long paths.
  f-vectors of four-polytopes. Projected products of polytopes.
  Convex hull algorithms. Constructions of bad examples.
  Polytope propagation: an inductive construction of polytopes.
  Application to statistical models.
- Abstract: Polytopes are concrete geometric objects. Interesting examples abound, which can and should be constructed, analyzed, visualized, and modified explicitly, "by hand", or with computer support (via the POLYMAKE system).

  This course is intended as a "hands-on" introduction to polytopes. We will look at various interesting and new constructions, at examples they produce, and at methods and tools for analysis and visualization. Topics will include a construction of 3-dimensional polytopes via circle packings, the visualization of polytopes via Schlegel diagrams, and the generation of "extremal" polytopes via subtle variations of the standard product construction. The final two lectures are devoted to algorithmic aspects.

3.4 June, 2005

4th Kortrijk Conference on Discrete Groups and Geometric Structures, with Applications
May 31 - June 3, 2005
Oostende, Belgium

The conference site will be at Hotel Royal Astrid, http://www.royalastrid.com/
The following main speakers will give a one hour talk:

- Oliver Baues (Univ. Karlsruhe),
- Yves Benoist (ENS, Paris),
- Martin Bridson (Imperial College, London),
- Benson Farb (University of Chicago)
- Oscar Garcia-Prada (Univ. Comp. Madrid)
- Etienne Ghys (ENS, Lyon)
- Domingo Toledo (Univ. of Utah, Salt Lake City)

Scientific Committee

- Yves Felix (U.C.Louvain, Louvain-la-Neuve)
- William Goldman (Univ. of Maryland, College Park)
- Fritz Grunewald (H.Heine Univ., Duesseldorf)
- Paul Igodt (K.U.Leuven / Kortrijk)
- Kyung Bai Lee (Univ. of Oklahoma, Norman)

Organisers: Karel Dekimpe, Yves Felix, Paul Igodt, Hannes Pouseele

All further information (programme, registration, abstract proposal, poster-session, short talks, proceedings,...) is found at the conference website: http://www.kulak.ac.be/workshop

4th Fejér Riesz Conference – Second Announcement
June 8 - 14, 2005
Eger, Hungary

The János Bolyai Mathematical Society, in cooperation with the Eszterházy Károly College of Eger is organizing a conference to commemorate the 125th anniversary of the birth of two outstanding Hungarian mathematicians: Lipót Fejér and Frigyes Riesz.

The conference will be held in Eger, Hungary, from June 8 (arrival date) till June 14 (departure date) in 2005. Please see the conference website http://www.math.u-szeged.hu/confer/fejerriesz/Friesz.htm for information.

If you plan to participate
1. PLEASE REGISTER ONLINE ON THE WEBSITE AS SOON AS POSSIBLE, for space is limited,
2. PLEASE MAKE YOUR HOTEL RESERVATION according to the instructions given on the website,
3. if you intend to give a contributed talk of about 25 minutes, please include the title and abstract in the online registration form (it should be in plain TEX).

The REGISTRATION FEE should be paid before APRIL 15, 2005 (amounts and address are on the conference site). If you have further questions please contact either
the János Bolyai Mathematical Society, BUDAPEST, Fõ u. 68, 1027, Hungary
(Tel/Fax: (36)(1) 201-6974 E-mail: bjmt@renyi.hu)
or the conference secretary László Szili: szili@ludens.elte.hu

Looking forward to seeing you at the conference, the Organizing Committee

3.5 September, 2005

IVth International Workshop on Functional Analysis
September 5-9, 2005
Esneux, Belgium

The IVth International Workshop on Functional Analysis will take place on September 5-9, 2005,Esneux, Belgium, in honour of the 65th birthday of Professor Jean Schmets (University of Liège). More information will be available in future Newsletters; see also the addresses http://www.ulg.ac.be/sectmath/Sept05.html or http://www.afo.ulg.ac.be/

The following main speakers are already scheduled: R. ARON (Kent), K.D. BIERSTEDT (Paderborn), J. BONET (Valencia), P. DOMANSKY (Poznan), G. GODEFROY (Paris-Jussieu), H. KOENIG (Kiel), R. MEISE (Düsseldorf), L. NARICI (New-York), M. VALDIVIA (Valencia), P. WOJTASZCZYK (Warsaw).

S. Dierolf, J. Wengenroth (University of Trier) F. Bastin (University of Liège)
Contact: F.Bastin@ulg.ac.be

2005 PhD-Day

Monday September 12, 2005, VUB

On September 12, the Belgian Mathematical Society organizes the first edition of its

PhD-Day.

The aim is to bring together the Belgian Mathematicians preparing their PHD or having obtained their PhD-diploma during the academic year 2004-2005. Lectures and posters will be organized. An award will be offered for the best poster.

The following preliminary program is scheduled.

- 10.00: Welcome from the President of the BMS
- 10.15-11.15: Plenary talk by Francis Buekenhout : "Why Mathematics?"
- 11.15-11.45: Coffee
- 11.45-12.45: Posters
- Lunch. (The lunch will be free for members of the BMS.)
- 14.30-16.30: Lectures (parallel sessions will be organized according to the number of registrations)
- 16.30-17.00: Coffee
- 17.00-18.00: Posters
- 18.00: Drink and award for the best poster

A second and more precise announcement will be included in the next Newsletter (May 15, 2005). Moreover a special issue will be prepared for next August, with the list of participants and abstracts.

PhD students who want to participate and present a lecture or a poster are kindly asked to register on the web page of the Society (http://bms.ulb.ac.be) before July 1, 2005. Direct contacts are also possible with the members of the Organizing Committee.

F. Bastin (F.Bastin@ulg.ac.be)
A. Bultheel (Adhemar.Bultheel@cs.kuleuven.ac.be)
S. Caenepeel (scaenepe@vub.ac.be)
P. Cara (pcara@vub.ac.be)
C. Finet (Catherine.Finet@umh.ac.be)
P. Godin (pgodin@ulb.ac.be)
H. Van Maldhegem (hvm@cage.rug.ac.be)

EMS-SCM Joint Mathematical Week-end
September 16-18, 2005
Barcelona, Spain

This meeting is organised by the Catalan Mathematical Society, under the auspices of the EMS. You can register on-line and follow the progress of the organisation at http://www.iecat.net/scm/emsweekend

Topics and plenary speakers
- Combinatorics and Graph Theory, Béla Bollobás (Trinity College, Cambridge and University of Memphis)
- Dynamical Systems, Jean-Christophe Yoccoz (Collège de France)
- Evolution PDEs and Calculus of Variations, Henri Berestycki (Ecole des Hautes Etudes en Sciences Sociales, France)
- Module Theory and Representations of Algebras, Henning Krause (Universität Paderborn)
- Non-commutative Geometry, Alexey I. Bondal (Steklov Mathematical Institute, Moscow)

Organizing Committee
Marta Sanz-Solé (Chair), Universitat de Barcelona
Jaume Amorós, Universitat Politècnica de Catalunya
José A. Carrillo de la Plata. ICREA-Universitat Autònoma de Barcelona
Carles Casacuberta, Universitat de Barcelona Dolors Herbera
Universitat Autònoma de Barcelona Teresa Martínez-Seara
Universitat Politècnica de Catalunya Rosa Maria Miró-Roig
Universitat de Barcelona Marc Noy
Universitat Politècnica de Catalunya

Session co-organizers
Lidia Angeleri-Hügel (Università degli Studi dell'Insubria)
Xavier Cabré (ICREA- Universitat Politècnica de Catalunya)
Peter Cameron (Queen Mary, University of London)
Arnfinn Laudal (University of Oslo)
David Sauzin (CNRS, France)
Giuseppe Toscani (Università di Pavia)

Marta Sanz-Solé

Address: Facultat de Matemàtiques, Universitat de Barcelona
Gran Via 585, E-08007 Barcelona
http://orfeu.mat.ub.es, phone: 34-934021655, fax: 34-934021601

3.6 November, 2005

Mathematical Analysis Day
November 10, 2005
Ghent University

At the occasion of his retirement and his 65th birthday, the Clifford Research Group of Ghent University will honour its founder Richard Delanghe by a one day symposium "Mathematical Analysis Day".

Date: Thursday the 10th of November, 2005

Venue: "Het Pand", Onderbergen, 9000 Gent

Speakers: Christiane Carton-Lebrun, Simone Gutt, Jean Schmets, Walter Van Assche, Jan Van Casteren, Frank Sommen

Welcome coffee at 09:30, Lunch at 13:00, Closing reception at 17:00

You are all cordially invited to attending (free of charge). Please register by sending an email to nds@cage.ugent.be with subject line: MAD-registration

The organizers
Fred Brackx, Hennie De Schepper, Frank Sommen
Ghent University, Department Mathematical Analysis

Clifford Research Group
Galglaan 2, B-9000 Gent, Belgium

8th International Conference of The Mathematics Education into the 21st Century Project
"Reform, Revolution and Paradigm Shifts in Mathematics Education"
November 25-December 1, 2005
In Cooperation with the Universiti Teknologi Malaysia (UTM)
Hotel Eden Garden, Johor Bharu, Malaysia,

Preliminary Announcement and Call for Papers

The Mathematics Education into the 21st Century Project has just completed its seventh successful international conference in Poland, following conferences in Egypt, Jordan, Poland, Australia, Sicily and the Czech Republic. Our next conference will be in Johor Bharu, in the very south of Malaysia, and very close to Singapore. The Chairman of the Local Organising Committee is Professor Noor Azlan Ahmad Zanzali, of the Faculty of Education, Universiti Teknologi Malaysia (UTM) who will be our local sponsors.

The conference will open with a Welcome Reception on Friday, November 25th and concludes after lunch on December 1st. The title of our conference is "Reform, Revolution and Paradigm Shifts in Mathematics Education". Papers are invited on all innovative aspects of evolutionary/revolutionary changes in Mathematics Education, past and future. For further conference details please email arogerson@vsg.edu.au.

The conference excursion will be to the unique historic city of Malacca. Side tours and trips can be arranged to other places in South East Asia and Australia/New Zealand. There will be an additional social programme for accompanying persons

3.7 2006

International Congress of Mathematicians
22–30 August 2006
Madrid, Spain

TO ALL MEMBERS OF EUROPEAN SOCIETIES OF MATHEMATICS

Dear colleague,

[...] All the up-to-date information about this event can be found in the Web page http://www.icm2006.org

Very soon we will start distributing relevant information concerning the organization y registration for the ICM among all pre-registred people. The pre-registration process is open and we want to invite you to pre-register through the web page to keep timely informed about the ICM. We want to make the ICM a big success and we cannot do it without the participation of as many mathematicians as possible. Thus we invite you to pre-register now for the ICM.

Looking forward seeing you in the ICM,

Manuel de Leon, President of the Organizing Committee of ICM
Carlos Andradas, Vicepresident
Facultad de Matematicas, Univ. Complutense, 28040 Madrid
tfno. +34 913 944 937; fax +34 913 945 027

4 Summary of PhD theses

K.U. Leuven, February 23, 2005
Integrable systems of Toda type related to orthogonal functions
Jonathan COUSSEMENT, Promotor: W. Van Assche

One of the classical examples of a nonlinear integrable dynamical system is the Toda lattice (TL). In 1975 Moser solved the finite version of this system with the aid of a spectral transform related to the theory of orthonormal polynomials. In fact, this spectral transform solves the finite version of the spectral theorem (or Favard theorem) for orthonormal polynomials where one starts from the recurrence relation and seeks a corresponding orthogonality measure. The evolution in time of the finite TL then corresponds to multiplying the orthogonality measure by an exponential factor where the exponent linearly depends on the time parameter. The aim of this thesis is to study some integrable systems which are in a similar way related to the recurrence relation of other kinds of orthogonal functions, such as Laurent orthogonal polynomials, orthogonal rational functions and multiple orthogonal polynomials. In Part I of the thesis we first of all show that there is a similar connection between the finite relativistic Toda lattice (RTL), introduced by Ruijsenaars in 1990, and the theory of Laurent orthogonal polynomials. Next, we introduce a new dynamical system which is in the same sense related to the recurrence relation of orthogonal rational functions. This system extends both the TL and RTL. We solve these systems for particular initial data with a similar analysis as Moser and establish their long-time behaviour explicitly. Finally, we look at the continuum limit of the RTL by studying some aspects in the asymptotic theory of Laurent orthogonal polynomials.

Part II deals with multiple orthogonal polynomials which arise naturally in the theory of simultaneous rational approximation or Hermite-Padé approximation. They are a generalization of orthogonal polynomials in the sense that they satisfy orthogonality conditions with respect to r ? 1 measures. First we obtain explicit formulas for some new examples. Next, we study multiple Gaussian quadrature. As a consequence we get a spectral transform which gives a (conditional) finite version of the spectral theorem for multiple orthogonal polynomials. Finally, we look for an integrable system related to the recurrence relation of multiple orthogonal polynomials, which extends the Toda lattice and which could be solved by this spectral transform for particular initial data.

ULg, March 24, 2005
Existence of natural and projectively equivariant quantizations
Sarah HANSOUL, Promotor: P. Lecomte

The word quantization carries several meanings. In quantum physics, for example, one can see a quantization as a procedure which associates a quantum observable (corresponding to a differential operator acting between half-densities on a manifold M) to a classical observable, or *symbol* (corresponding to a map on the cotangent bundle T^*M, polynomial on each fibre). In fact, every space of differential operators acting between sections of vector bundles over M has an associated space of symbols, and these two sets are isomorphic as vector spaces. In our thesis, what we call a quantization is a linear bijection between a space of symbol and a space of differential operators depending on a linear connection ∇ on M. A few years ago, P. Lecomte conjectured the existence of a natural and projectively equivariant quantization, namely a quantization which is natural and takes the same values on two connections ∇ and ∇' projectively equivalent (i.e. ∇ and ∇' define the same geodesics on M up to reparametrization).

The thesis is devoted to prove the existence of such quantizations, when the differential operators considered act between sections of a vector bundle associated to the fiber bundle P^1M of linear frames of M. The method we use consists in translating the problem from the manifold M to a bigger manifold $\tilde{M}$, where it is easier to solve. The difficulty then relies in the translation of the problem from M to $\tilde{M}$, which consists in lifting the symbols from M to $\tilde{M}$ and in pushing down the differential operators from $\tilde{M}$ to M, in a natural and projectively equivariant way.

As a first step, we define for every fibre bundle E over M associated to P^1M a fibre bundle $\tilde{E}$ over $\tilde{M}$ associated to $P^1\tilde{M}$. This problem is equivalent to associate a representation $\tilde{V}$ of $GL(m+1,\mathbb{R})$ to every representation V of $GL(m,\mathbb{R})$, and we solve it using Young diagrams. If the symbols are smooth sections of E, then we define the lift of symbols as valued in smooth sections of $\tilde{E}$.

In order to construct the lift of symbols, we use the theory of Cartan connections. More precisely, we define a Casimir operator, depending on a Cartan connection in a natural way, and define the lifted symbols as being the eigenvectors of this operator. Eventually, we show that it is possible to push down the differential operators from $\tilde{M}$ to M naturally and independently of ∇. Note that the lift of symbols doesn't always exists. We obtain

a sufficient condition for the existence of a natural and projectively equivariant quantization, depending on the space of symbols considered.

University of Mons-Hainaut, April 22, 2005
14.00 , Auditoire Gutenberg, bâtiment Les Grands Amphithéâtres
Vector-valued variational principles –
M-ideals of compact operators on c_0 –
Lineability and spaceability
Lucas QUARTA, Promotor: C. Finet

The thesis is divided into three distinct parts.

The main goal of the first part is the generalization of variational principles, well-known for real-valued functions, to functions which take their values in partially ordered Banach spaces. The vector-valued notion of lower semi-continuity is a point of particular interest. The problem in the vector-valued case was usually handled through a scalarization process, a method which allows to bring the situation back to the original scalar-valued setting. This method leads to different types of drawbacks: even it imposes the interior of the ordering cone to be non empty, or it imposes to work with the strongest notion of lower semi-continuity. Introducing a new notion of lower semi-continuity (less restrictive than the ones known before) and the notion of ϵ-extremal point (which allows to do without any scalarization process), we prove, without any hypothesis on the ordering cone, a vector-valued version of the Deville-Godefroy-Zizler variational principle for functions satisfying this kind of semi-continuity. We deduce vector-valued versions of Ekeland's variational principle and Borwein-Preiss smooth variational principle.

The second part of the work deals with the M-ideals of the space $L(X,Y)$ of bounded linear operators between two Banach spaces X and Y, with a special attention paid to the following question: for which spaces X and Y is the subspace $K(X,Y)$ of compact operators an M-ideal in $L(X,Y)$? For instance, $K(X,c_0)$ is an M-ideal in $L(X,c_0)$ for every Banach space X, but $K(\ell^\infty)$ is not an M-ideal in $L(\ell^\infty)$. We prove, without any hypothesis on X (contrary to what was known before), that $K(X,c_0)$ is an M-ideal in $L(X,\ell^\infty)$.

The third part of the thesis is a contribution to a domain of research devoted to the question of lineability of sets of functions sharing special properties: is it possible to construct vector spaces of *big* dimension contained in these sets? We study two new problems of lineability. The first one concerns the set $\hat{C}(S)$ of continuous functions on a subset S of $\mathbb{R}^n$ and which admit a unique absolute maximum on S. This set is *big* from the topological point of view. It is then, a priori, reasonable to think that one get a similar answer for the algebraic point of view. We prove that this intuition is false: the lineability of the set $\hat{C}(S)$ is entirely determined by n (i.e. the number of variables) and the compactness of S. The second problem concerns the set of interpolating continuous functions. We show how the lineability of this set depends on the type of interpolation and on the set of sequences to interpolate.

5 Miscellaneous

5.1 From ULB

UNIVERSITE LIBRE DE BRUXELLES
OUVERTURE D'UN POSTE EN GEOMETRIE DIFFERENTIELLE

Moyennant l'accord des autorités, l'Université Libre de Bruxelles annoncera prochainement l'ouverture en octobre 2005 d'un poste de chargé de cours au Département de Mathématique dans le domaine de la géométrie différentielle. Les candidats sont invités à prendre contact dès maintenant avec un des membres de cette unité, en joignant leur Curriculum Vitae. Après une première sélection, certains candidats seront invités au début de l'année 2005 à faire des exposés et séjourner brièvement à l'université.

Pour plus de renseignements, ou pour annoncer votre candidature, veuillez contacter:
Frédéric Bourgeois (Frederic.Bourgeois@ulb.ac.be - +32 2 650 58 40)
Simone Gutt (sgutt@ulb.ac.be - +32 2 650 58 38), ou
Luc Lemaire (llemaire@ulb.ac.be - +32 2 213 35 46)

Université Libre de Bruxelles
Département de Mathématique
Campus Plaine CP 218, Bd du Triomphe, 1050 Bruxelles - Belgique

5.2 Abel Prize

The committee of the third Abel Prize has met in Brussels on February 18, 2005

Following its tradition of meeting in different capitals of Europe, the Abel Committee 2005 (Erling Størmer (chair), Don Zagier, Gilbert Strang, Ingrid Daubechies, Lázsló Lovász), in charge of nominating this year's laureate of the *Abel Prize in mathematics*, was in Brussels on February 18, 2005. At this occasion, the *Royal Norwegian Embassy* and the *Mission of Norway to the EU*, in cooperation with the *Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique* and the *Koninklijke Vlaamse Academie van België voor Wetenschappen and Kunsten*, organized, at the *Palais des Académies*, a lunchean event, chaired by the Ambassador Bjørnebye. It consisted of the following short lectures, followed by a reception :

- J. Van Landuyt (President of the Royal Flemish Academy of Belgium): 'Opening remarks'
- Ph. Busquin (Member of the European Parliament) : 'Mathematics and its importance for research and innovation'
- J. Fridthjof Bernt (President of the Norwegian Academy of Science and Letters) : 'The Abel Prize – background and vision'
- J. Mawhin (President of the Belgian committee of the ICSU) : 'Mathematical research in Belgium : the questionable success of an export'
- Sir Michael Atiyah (Abel Laureate 2004) : 'Reflections by an Abel Laureate'.

Here is the text of J. Mawhin's lecture.

Mathematical research in Belgium : the questionable success of an export

It is a great honor and pleasure for the Belgian mathematical community and for our Academies, to host the meeting of the prestigious Abel committee in charge of nominating the third Abel Prize. The initiative of Norway in creating the Niels Hendrik Abel Memorial Fund and the Abel Prize not only fills a gap left by Alfred Nobel when founding his famous Prizes, but is an important tribute to the memory of the Norwegian mathematician Abel, whose contributions, during his short life, have modeled the shape of important parts of mathematics.

To give you a fair idea of mathematical research in Belgium in eight minutes is impossible. I will therefore concentrate on the question of Belgian mathematicians considered as an export or, in a more provocative way, do Belgians need to leave Belgium to remain, or even to become, first class mathematicians ?

The first example coming to the mind is Simon Stevin. Born in Brugge in 1548, his scientific life only started after he left the Southern Provinces (Belgium to-day) for the Northern ones (Holland to-day), possibly for religious reasons. He became the military engineer and scientific advisor of the Stadhouder Maurice of Orange and died in 1620 in Den Haag. If you see his statue in Brugge, you will hardly imagine the violent opposition made to its erection by an important part of the Belgian *intelligentsia*.

If we except, in the XVIIth century, the two Belgian precursors of the calculus, Grégoire de Saint-Vincent of Brugge, and René-François de Sluze of Visé, we must wait for the XIXth century to see a renewal of mathematical activity in Belgium. In the mean time, we have succeeded in exporting first class mathematicians in, so to say, an anticipative way. Three examples.

The Bernoullis were a wealthy and influential protestant family in Antwerpen. The bloody repression of the Duke of Alba forced them to emigrate in 1570 to Frankfurt, before moving in 1622 to Basel. This is why the Bernoulli dynasty is one of the most shining glories of Swiss and not of Belgian history of science. To be fair, one should not exclude that Jacques and Jean Bernoulli's mathematical talent came from their Swiss mother, and their unpleasant character from their Belgian ancestors !

About ten kilometers East of Liège lies a tiny hamlet named Richelette. A family called 'de Richelette' (which means 'from Richelette'), traced there since 1500, moved around 1600 to Verviers, half way between Liège and Aachen. The name 'de Richelette' was germanized into 'Dirichlet' when Antoine de Richelette married a girl from Düren in 1749 and moved there, where his grand-son, the mathematician Lejeune Dirichlet (Lejeune just means junior), famous for his problem and his series, was born two hundred years ago. A similar case is Christoffel, well known for his symbols, whose grandfather left Verviers for Monschau, a bordertown in Germany. The Christoffel family lived in the province of Liège since the XIth century.

The major Belgian mathematical figure for the first half of the XXth century is Charles de La Vallée Poussin (1866-1962), famous for his proof of the prime number theorem. He looks like the best counter-example

to my claims about emigration, having teached at the *Université Catholique de Louvain* during sixty years, with only a break in Harvard, Paris and Genève, during the first World War. Despite of this loyalty to his country, most foreign mathematicians I have met were more than surprised to learn that he is Belgian and not French.

We now move to the second half of the XXth century and to living mathematicians. Jacques Tits (born in 1930) was a child prodigy, admitted at the *Université Libre de Bruxelles* when he was fourteen, doctor in science five years later. He then spends several years at the *Institute of Advanced Studies* of Princeton and the ETH Zürich, becomes, not without difficulties, assistant professor in his *alma mater* in 1956, but leaves Belgium in 1964 for a chair at *Bonn Universität*, before moving to the *Collège de France* in 1974. I doubt that the claim that 'each Belgian has a brick in his belly' had any influence on his famous theory of buildings. He shared the *Wolf Prize* with Gromov in 1993.

A former student of the *Faculté Polytechnique de Mons* and the *Université Libre de Bruxelles,* David Ruelle (born in 1935) leaves Belgium for a research assistantship at the ETH in Zürich, a membership at the *Institude of Advanced Studies* in Princeton, and finally in 1964, a professorship at the *Institut des Hautes Etudes Scientifiques* (IHES) of Bures-sur-Yvette. His contributions to statistical mechanics, quantum field theory, dynamical systems, turbulence and chaos need not to be emphasized.

Pierre Deligne's carreer (he is born in 1944) has strong similarities with Tits one. As an undergraduate student at the *Université Libre de Bruxelles*, he spends, under Tits advice, part of his time in Bures-sur-Yvette, instead of following the standard curriculum. After his PhD in 1968, an appointment at his *alma mater* does not prevent him to return to the IHES, to work with Grothendieck. He leaves France in 1986 for a chair at the IAS in Princeton. His proof in 1971 of the Weil conjecture on Riemann's zeta function had made him a Fields medallist in 1978. Ten years later, he shares the *Crafoord Prize* with Grothendieck, and he has received the *Balzan Prize* in 2004.

Jean Bourgain (born in 1954) gets his PhD in 1977 at the *Vrije Universiteit Brussel*, under the direction of Delbaen (now in ETH Zürich). He holds several visiting positions in France and USA, and is appointed in 1980 as a tenure research fellow at the *Vrije Universiteit Brussel.* In 1985, he leaves Belgium for the Doob Chair at the *University of Illinois.* and a professorship at the IHES, before joining Deligne, in 1994, at the IAS and as a Fields medallist. Bourgain is an outstanding analyst, combining a vivid mathematical imagination with an extraordinary technical power.

To those four musketeers I should add the name of Ingrid Daubechies. Being with us to-day, she can describe her case better than anyone.

The outstanding mathematical talent of Tits, Ruelle, Deligne, Bourgain, Daubechies, revealed during their student years in Belgium, is of course the first ingredient of their prestigious accomplishments. But any talent must be detected and encouraged. A good high school education, with qualified and motivated teachers, and a good level of the university curriculum, with supporting and open minded professors, play a basic role. But how much of the potential of those talented mathematicians would have been realized, if they had not left their country, often quite early ?

The Belgian higher education system offers no structure equivalent to, say, the *Collège de France*, the *Institude of Advanced Studies,* the *Institut des Hautes Etudes Scientifiques*, or the *ETH.* The Belgian university system is a quite egalitarian one, where promotion in rank and salary is mostly based upon age, where state funding mostly depends upon the number of students, where undergraduate teaching and administration absorb a growing part of time and energy, where the only accepted comparison between institutions is through the number of their students, their part of market, as one says to-day. Belgian long and unfortunate tradition of defiance and even contempt for intellectual activity, combined with the present political structure of our surrealist kingdom makes to-day most unlikely, if not impossible, the creation in Belgium of any type of institute of advanced studies for exact sciences.

The optimists will say that Tits, Ruelle, Deligne, Bourgain, Daubechies remain first class ambassadors of Belgian mathematics, but are we sure that the very source of such talents will not dry up ? Are we sure that the new educational structure designed by the Bologna treatise will increase the level of our higher education, by putting on the same level universities with a long research tradition and purely professional schools ? Are we sure that the liberalization of services discussed in European policies will maintain the quality or the freedom of fundamental research ? Are we sure that the shortage of qualified high school mathematics teachers, due to the decrease of interest of young people for mathematics in general and for teaching it in particular, will not exhaust the raw material of our export ? Are we sure that decreasing the level and number of hours of mathematics in high school will maintain the vocations ?

A proverb tells that the hell is paved with good purposes. I do hope the hell can still be avoided for Belgian mathematical research, and that Norway's initiatives and vitality can be taken as an example. We must remember that, for nations like for individuals, the hell, indeed, is paved with missed opportunities.

5.3 From ULg

Call for Nominations Prizes of the Liege Royal Society of Sciences

The Liege Royal Society of Sciences calls for nominations for prizes awarded by a foundation honouring the 150th anniversary of its foundation. These international prizes are intended for researchers less than thirty-five years of age.

Four prizes of 2,500 EUR each will reward a corpus of work published either by a single author or in collaboration. One of the four prizes, in honour of Lucien Godeaux, will be awarded in the field of mathematics.

Requests for information on how to make nominations should be directed to: Professor J. Aghion, c/o Secretariat of the Royal Society of Sciences of Liege, Institute of Mathematics of the University of Liege, 12 Grande Traverse, Sart Tilman Bat. B 37, B-4000 Liege 1, Belgium (e-mail: jaghion@ulg.ac.be).

The deadline for applications is October 1st, 2005.

5.4 From the EMS

Every year the European Mathematical Society allocates funds to support mathematicians from East European countries. In previous years also mathematicians from Central European countries were eligible for this support, but after most of these countries joined the European Union in May 2004, their mathematicians are no more eligible for it.

The support is primarily intended to cover travel expenses of East European mathematicians traveling from their home country to a conference in some other European country. The chances of such applications are highest if the importance of the presence of the applicant is proven by the promise of the organizers to cover local expenses of the applicant at the event, or at least to wave the conference fee. In exceptional cases support can be granted also to East European mathematicians traveling to research stays in other European countries or to conferences organized in eligible countries.

The annual budget of the Committee for Support of East European Mathematicians is 10 K euro. I am adding this information so that the applicants may themselves estimate what could be a reasonable sum to apply for.

In the year 2005 we will be deciding about the applications in two rounds. In February applications for the period till August 2005 will be considered, the rest of the year will be considered in June 2005. The deadlines for the applications are January 15, 2005 for the first round and May 31, 2005 for the second one. The applications may be sent to the secretary of EMS Ms. Makelainen or directly to me.

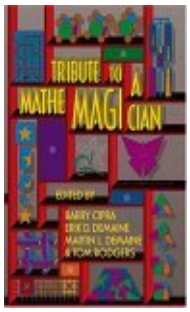
Please, be so kind and distribute this information within your society so that it reaches the widest range of possible applicants.

With best regards, Jan Kratochvil
Chair of the EMS Committee for Support of East European Mathematicians for 2005-2008
e-mail: honza@kam.mff.cuni.cz, phone: +420-221914234

Department of Applied Mathematics, Charles University, Malostranske nam 25, 118 00 Praha 1, Czech Republic

6 Fiction

Barry Cipra, Erik Demaine, Martin Demaine, Tom Rodgers (eds.) *Tribute to a magician*, A K Peters, Wellesley, MA, 2004. 350 pages. Hard cover, ISBN 1-56881-204-3, 38 USD.



It has been explained in the review of *Puzzler's tribute. A feast for the mind*, A K Peters, 2002 (This Newsletter, number 43, p. 11), that there is a bunch of enthusiastic puzzlers, magicians, mathematicians, all admirers of Martin Gardner, the godfather of recreational mathematics, that meet every two or three years to exchange ideas and share their common interest. The previous book was based of the previous three of these *Gatherings for Gardner* (G4G2, G4G3, G4G4). The present one is based on G4G5, held in Atlanta on April 5-7, 2004. Since G4G4, a lot of information and interesting links are available at their web site `http://www.g4g4.com`.

This volume has the same structure as the previous one.

It begins with obituaries of two of their members: Edward Hordern (1941-2000) and Nobuyuki Yoshigahara (1936-2004). Hordern was not only a devoted puzzler, but he had

also one of the biggest puzzle collections. Nobuyuki Yoshigahara, best known as Nob, is author of some 80 puzzle-related books (see e.g. *Puzzles 101, a puzzlemaster's challenge* reviewed in this Newsletter, number 48, p. 12).

As in the previous volume, this collection also contains an amalgam of different sorts of texts. Since this was the G4G5 meeting, the pentagram is a general theme, but it is certainly not restricted to it. There are for example 5 categories of puzzles, each collected in a separate chapter. Some historical Chinese ceramic puzzle vessels, and interlocking puzzles from Mongolia are described in "braintreasures". The next level are "brainticklers" which include for example fold-and-cut magic, measuring time with a three-legged hourglass, but also Gödel-like puzzles. The "brainteasers" need a longer time to play or to solve. There are sliding coin puzzles, a cryptogram, and riddle-like teasers. There is usually more theoretical background when the problems become more involved like in the "braintempters" section. For example how large should a word list be if you wanted to form an $n \times n$ block of letters, such that every line and every column is a genuine (English) word? Furthermore, you can find winning card sequences for black jack, but also all sorts of jigsaw-like puzzles with pentominos, polyominos, and generalizations. Finally the "braintaunters" are the real challenge. There is the Panex puzzle (see `http://www.baxterweb.com/puzzles/panex/`), which at first sight looks like the Towers of Hanoi, but it is quite different, there are hinged dissections and generalizations (see also This Newsletter, number 46, p. 8-9 for flexagons, and number 44, p. 10 for hinged dissections or `http://www.cs.purdue.edu/homes/gnf/book.html`), the complexity analysis of sliding block puzzles (see the applet on `http://www.puzzlebeast.com/ slidingblock/index.html`) and more.

In a last chapter called "braintools", some mathematical and computational aids for the design and solution of puzzles are given. There is the Pólya-Burnside Lemma which can give the number of solutions in combinatorial problems, computer algorithms for sliding block puzzles, folding techniques for origami problems etc.

Again a book which is like a magic box, full of tricks for any puzzle lover.

Adhemar Bultheel

7 The end ...

In the topological hell the beer is packed in Klein's bottles.

– – ––

To a mathematician, real life is a special case.

– – – – ––

Some say the pope is the greatest cardinal. But others insist this cannot be so, as every pope has a successor.

– – – – – – ––

Life is complex. It has real and imaginary components.

– – – – – – – – ––

What keeps a square from moving? Square roots, of course.

– – – – – – – – – – ––

A mathematics professor was lecturing to a class of students. As he wrote something on the board, he said to the class "Of course, this is immediately obvious". Upon seeing the blank stares of the students, he turned back to contemplate what he had just written. He began to pace back and forth, deep in thought. After about 10 minutes, just as the silence was beginning to become uncomfortable, he brightened, turned to the class and said "Yes, it IS obvious".

SECOND ANNOUNCEMENT

JOINT BeNeLuxFra CONFERENCE in MATHEMATICS

JOINT MEETING OF THE BELGIAN, DUTCH, LUXEMBOURG AND FRENCH MATHEMATICAL SOCIETIES

This meeting will take place on the Sterre Campus (Krijgslaan 281) of Ghent University (Belgium) from May 20 (Friday) to May 22 (Sunday), 2005.

1. MAIN SPEAKERS

The plenary talks will be given by:

Frederic Campana (Université de Nancy)
Yves Benoist (Ecole Normale Supérieure, Paris)
Jan Willem Klop (Vrije Universiteit Amsterdam)
Françoise Point (FNRS and Université de Mons-Hainaut)

The fifth plenary lecture will be the **Brouwer Lecture**. The Brouwer Medal Award Winner is

Lucien Birgé (Laboratoire de Probabilité, Université Paris VI)

Furthermore, there are evening leisure-lectures by

Jean Doyen (Université Libre de Bruxelles)
Burkard Polster (Monash University, Melbourne)

2. SPECIAL SESSIONS

There will be ten Special Sessions, and one extra intended also for high school teachers. We list the sessions, the organizers, and the speakers that are already fixed:

I. **Geometry**

a. *Differential Geometry* organized by Simon Gutt, Norbert Poncin and Martin Schlichemaier [speakers: Christian Duval (Marseille), Klaas Landsman (Nijmegen), Eric Leichtnam (Paris), Mohsen Masmoudi (Nancy), Pierre Mathonet (Liege)]

b. *Algebraic Geometry* organized by Olivier Debarre [speakers: Cinzia Casagrande (Pisa), Hélène Esnault (Duisburg-Essen), Gerard van der Geer (Utrecht) and Mihai Paun (Strasbourg)]

II. **Applied Mathematics**

a. *Coding Theory and Cryptography* organized by Henk van Tilborg and Anne

Canteaut [speakers: Magali Bardet-Turel (Paris), Daniel Augot (INRIA-Rocquencourt), Christopher Wolf (Leuven), An Braeken (Leuven), Ellen Jochemsz (Eindhoven), Reinier Bröker (Leiden), Ludovic Perret (ENSTA, Paris)ENSTA, Paris]

b. *Mathematical Statistics* organized by Richard Gill, Marc Hallin and Pascal Massart [speakers: Gérard Biau (Montpellier), Eric Cator (Delft), Roel Braekers (Diepenbeek), Jon A. Wellner (Washington), Davy Paindaveine (Bruxelles) and Patricia Reynaud (Paris)]

III. **Analysis**

a. *Harmonic Analysis* organized by Alain Valette, Carine Molitor-Braun and Bachir Bekka [speakers: Stefaan Vaes (Paris), Bertrand Remy (Lyon), Emmanuel Breuillard (IHES), Yves de Cornulier (EPFL and Neuchâtel)]

b. *Partial Differential Equations* organized by Paul Godin and Gilles Lebeau.

IV. **Miscellaneous**

a. *Computer Science* organized by Bert Hoogewijs and Jan Willem Klop, with subsession (Friday) *Math applied* organized by Rik Janssen [speakers include Sara Van Langenhove (Gent), Geert Vernaeve (Gent), Gudron Geuze (Nijmegen), Marie-Colette van Lieshout (CWI Amsterdam), D. Vidovic (Delft), Man Nguyen (TUEindhoven), Arie de Niet (RUGroningen), Brenny van Groesen (Twente) and Karel Keesman (Wageningen)]

b. *History of Mathematics* organized by Gerard Alberts, Maarten Bullynck and Catherine Goldstein [speakers: Albrecht Heeffer (Gent), Steven Wepster (Utrecht), Liliane Alfonsi (Paris), Maarten Bullynck (Gent), Danny Beckers (Nijmegen-Maastricht), Frédéric Brechenmacher (Paris) and—to be confirmed—Karin Reich (Hamburg)]

V. **Algebra**

a. *Non Commutative Algebra* organized by Jacques Alev and Lieven Le Bruyn [speakers: Iain Gordon (Glasgow), : Olivier Schiffmann (Paris), Markus Reineke (Munster) and Raf Bocklandt & Geert Van de Weyer (Antwerp)]

b. *Model Theory* organized by Zoe Chatzidakis and Françise Point [speakers: Lou van den Dries (Urbana), Johannes Nicaise (Leuven/Bordeaux), Alexandre Rambaud (Paris), Marcus Tressl (Regensburg), Franck Benoist (Paris) and Zahidi Karim (Antwerp)]

Extra Session on *Education* organized by Dirk Siersma, mainly on the Project PISA (Program for International Student Assessment) of the OESO [speakers include Rainer Kaenders (Nijmegen) and Dirk Janssens (Leuven)]

3. SCHEDULE OF THE MEETING

Friday, May 20

11.30 h – 13.30 h: Registration
13.45 h – 14.00 h: Opening Ceremony
14.00 h – 15.00 h: **Yves Benoist**
Coffee & tea
15.30 h – 17.30 h: Special Sessions a
17.45 h – 18.45 h: **Jean Doyen**, Mathematics Cinema Show

Saturday, May 21

08.00 h – 09.00 h: Registration

09.00 h – 10.00 h: **Françoise Point**
Coffee & tea
10.30 h – 12.30 h: Special Sessions b + Extra Session
13.30 h – 14.25 h: Annual Meeting of the KWG.
14.00 h – 14.25 h: General Assembly of the BMS.
14.30 h – 16.00 h: Special Sessions a + Extra Session
Coffee & tea
16.30 h – 17.30 h: **Burkard Polster**, Mathematical Bell Ringing
17.45 h – 19.00 h: Brouwer Medal Ceremony/Brouwer Lecture by **Lucien Birgé**
19.00 h – 20.00 h: Reception
20.15 h: Conference Dinner.

Sunday, May 22

09.00 h - 10.00 h: **Jan Willem Klop**
Coffee & tea
10.20 h - 11.50 h: Special Sessions b
12.00 h - 13.00 h: **Frederic Campana**
Closing of the meeting

4. REGISTRATION, PROCEEDINGS AND FURTHER INFORMATION

The **Bulletin of the Belgian Mathematical Society Simon Stevin** will publish a special issue for the proceedings of the conference containing invited papers of the plenary speakers and some speakers in the special sessions. The submission of the latter papers is organized through, handled and decided by the session organizers.

The **registration fee** for the conference, to be paid on arrival, is 15 EURO and covers the Coffe/Tea breaks. Non-members of the Belgian Mathematical Society will have the opportunity to order a copy of the Proceedings at the price of 10 EURO (per copy).

To **register** for the conference, just visit the URL `http://cage.ugent.be/bnlf/` and click on registration. You will then be required to fill in a short form. If you want us to book for you a hotel room, then you can complete the appropriate items on the registration form. We have made some pre-reservations already. The prices of the rooms vary between 65 and 87 EURO per night. In order to simplify administration, we will fill the rooms according to increasing prices. After registration, you will receive an email with the details of your reservation, which you will then have to confirm. Note that normally the prices are higher, especially in the center of the old town, but a substantial discount has been given because of the number of rooms we could already confirm. Note also that we do not ask for prepayments, but we count on the fact that people who register will also show up!

The deadline for registration is April 1, 2005. After this date, one can still show interest to attend the conference, but one has to take care of his/her own hotel reservation.

Travel directions can be found on `http://cage.ugent.be/foto/map.html` (the location is *Departments of Pure Mathematics*.

Gent/Ghent is a historic city with a lot of places to visit! If you want to explore the possibilities, or you want to find out more about the town, then go to `http://www.gent.be/`.

The **conference dinner** will take place on **Saturday evening, May 21**. During the conference there will be opportunities to register and pay for this dinner.

You may also wish to visit the **homepage** of the conference, which is

`http://cage.ugent.be/bnlf/`

and which will be updated from time to time.

5. SCIENTIFIC ORGANIZING COMMITTEE:

A. Hoogewijs (Ghent University), F. Loeser (Ecole Normale Superieure, Paris), C. Molitor-Braun (University of Luxembourg), H. te Riele (Centrum voor Wiskunde en Informatica, Amsterdam), H. Van Maldeghem (Ghent University)

6. LOCAL ORGANIZING COMMITTEE:

B. Hoogewijs and H. Van Maldeghem (both Ghent University)

FINANCIAL SUPPORT:

1. Fonds Simon Stevin – Ghent University
2. Fund for Scientific Research – Flanders (Belgium)
3. Fonds National de la Recherche Scientifique (Belgique)
4. Scientific Research Network FWO "Fundamental Methods and Techniques in Mathematics".
5. The organizing national Mathematical Societies.

7. Satellite Meetings

A. There will be a "groupe de contact FNRS" on Logic and Model Theory on Friday morning, May 20, also taking place in Gent, Room Emmy Noether, S25, Krijgslaan 291. It is organised by Françoise Point. More information at `http://www.logique.jussieu.fr/www.point/`. Speakers are Françoise Delon (C.N.R.S., Paris 7), Paola dAquino (Seconda Universita di Napoli) and Alex Wilkie (Oxford, United Kingdom).

B. Seminar Social Choice Theory. Also on Friday morning in Gent, Room 7, S22, Krijgslaan 281. Organized by Harry De Swart (more information: `h.c.m.deswart@uvt.nl`). Speakers are Peyton Young (Johns Hopkins, Baltimore) and Rob Bosch (Netherlands).