BRÅKET

Information om seminarier och högre undervisning i matematiska ämnen i Stockholmsområdet

NR 20 **ONSDAGEN DEN 20 MAJ 2009**

BRÅKET

Veckobladet från Institutionen för matematik vid Kungl Tekniska Högskolan och Matematiska institutionen vid Stockholms universitet

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Sista manustid för nästa nummer: Torsdagen den 28 maj kl. 13.00.

Disputation i matematik

Henrik Strohmayer skall disputera vid SU på avhandlingen *Prop profiles of compatible Poisson and Nijenhuis structures* tisdagen den 2 juni kl. 13.00. Se sidan 9.

11'th Stockholm-Uppsala Symposium in Mathematical Statistics

Detta skall äga rum vid SU onsdagen den 3 juni. Se sidan 6.

SEMINARIER

On 05–20 kl. 10.15–12.00. Kombinatorik-algebra-seminarium. Benjamin Nill, Berlin: *Hollow lattice polytopes and Ehrhart theory.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 19 sidan 4.

On 05–20 kl. 11.00–12.00. Dubbelseminarium om fasproblemet inom kristallografi. (Det första seminariet.) **Dr. Gérard Bricogne,** Global Phasing Ltd, Cambridge, United Kingdom: *Mathematical aspects of X-ray crystallography: Status and open problems.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 19 sidorna 6–7.

On 05–20 kl. 11.00–12.00. KTH/Nordita/SU Seminar in Theoretical Physics. José M. M. Senovilla, Bilbao: *What is the surface of a black hole?* Sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se sidan 4.

Fortsättning på nästa sida.

Disputation i matematik

Michael Björklund skall disputera på avhandlingen *Limit Theorems for Ergodic Group Actions and Random Walks* tisdagen den 26 maj kl. 13.00 i sal F3, KTH, Lindstedtsvägen 26, b.v. Se Bråket nr 19 sidan 11.

Algebra and Geometry: A Nordic conference for graduate students

Denna skall äga rum vid KTH den 27–29 maj. Se Bråket nr 19 sidorna 9–10.

Dynamical trends in Analysis

En konferens med denna titel skall äga rum vid KTH den 27–30 maj. Se sidan 10.

Seminarier (fortsättning)

On 05–20 kl. 13.15–14.15. Seminarium i analys och dynamiska system. Adam Jonsson: *Lowpass filters for dilations of* $\mathbb{R}^2$ *of determinant* ± 2. Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 19 sidan 5.

On 05–20 kl. 13.15–15.00. Algebra and Geometry Seminar. Vladimir Dotsenko, Trinity College Dublin: *Gröbner bases for operads.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 4.

On 05–20 kl. 14.30–15.30. KCSE (KTH Computational Science and Engineering Centre) Seminar. Anders Forsgren, Optimeringslära och systemteori, KTH: *On the behaviour of the conjugate-gradient method on ill-conditioned problems.* Rum RB15, Roslagstullsbacken 15, AlbaNova universitetscentrum. Se Bråket nr 18 sidan 7.

On 05–20 kl. 14.40–15.40. Dubbelseminarium om fasproblemet inom kristallografi. (Det andra seminariet.) **Dr. Tomas Lundqvist,** AstraZeneca: *Title to be announced.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 19 sidorna 6–7.

On 05–20 kl. 15.15. Seminarium i matematisk statistik. Stanislav Volkov, University of Bristol: *Going through a passport control with wife, or sequential adsorption at extremes.* Rum 306 (Cramérrummet), hus 6, Matematiska institutionen, SU, Kräftriket. Se Bråket nr 19 sidan 3.

Må 05–25 kl. 13.15–14.15. DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis). Emmanuel Breuillard, Université Paris-Sud, Orsay: *Equidistribution of dense subgroups of nilpotent Lie groups.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 5.

Må 05–25 kl. 13.15. Seminarium i teoretisk datalogi. Joachim Parrow, Uppsala universitet: *Three holy grails of programming models.* Rum 1537, KTH CSC, Lindstedtsvägen 3, plan 5. Se Bråket nr 19 sidan 8.

Må 05–25 kl. 14.45–15.45. DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis). Uri Shapira, Hebrew University: *Applying dynamics to number theory.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 6.

Må 05–25 kl. 16.00–17.00. DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis). Ben McReynolds, University of Chicago: *Geometric spectra.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 7.

Ti 05–26 kl. 13.00. Seminarium i statistik. *(Observera dagen och lokalen!)* **Professor Robert Fildes,** Lancaster University: *Business forecasting and statistical modelling: optimally combining disparate information.* Hörsal B3, Statistiska institutionen, SU. Se Bråket nr 19 sidan 8.

Ti 05–26 kl. 13.15. Plurikomplexa seminariet. Berit Kemppe, Umeå: *Maximal measures and minimal functions.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 11.

Ti 05–26 kl. 16.15–18.00. Debatt om matematikens roll i finansvärlden: *Från derivata till derivat.* Sal D2, KTH, Lindstedtsvägen 5, b.v. Se sidan 8.

Fortsättning på nästa sida.

Seminarier (fortsättning)

Ti 05–26 kl. 18.00. Populärvetenskaplig föreläsning i fysik. Professor Gen Larsson, Bioteknologi, KTH: *Biologiska celler som fabriker: Om cellers förmåga att tillverka vardagens produkter.* Oskar Kleins auditorium, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se Bråket nr 19 sidan 5.

On 05–27 kl. 11.00–12.00. KTH/Nordita/SU Seminar in Theoretical Physics. David Sherrington, Oxford: *Physics and complexity.* Sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se sidan 4.

On 05–27 kl. 13.15. Seminarium i teoretisk datalogi. Elchanan Mossel, UC Berkeley and Weizmann Institute of Science: *Quantitative social choice theory.* Rum 1537, KTH CSC, Lindstedtsvägen 3, plan 5. Se Bråket nr 19 sidan 8.

On 05–27 kl. 13.15. Algebra and Geometry Seminar. *(Observera lokalen!)* **Christian Lundkvist:** *Stable degenerations and the Fulton-MacPherson compactification.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 9.

On 05–27 kl. 18.00–19.00. Offentlig föreläsning på Kungl. Vetenskapsakademien. Professor Alan Sokal, New York University, USA: *What is science and why should we care?* Kungl. Vetenskapsakademien, Lilla Frescativägen 4A, Stockholm. Se Bråket nr 19 sidan 7.

To 05–28 kl. 10.30. Seminar in Fluid Mechanics. Ramis Örlü, Mekanik, KTH: *Wall-bounded turbulent flows — revisited.* Seminarierummet, Institutionen för mekanik, KTH, Teknikringen 8. Se sidan 5.

Fr 05–29 kl. 14.30. Kista Science Seminar. Lars Bergström, Fysikum, SU: *Dark matter, dark energy and black holes.* Sal C1, Electrum, Isafjordsgatan 22, Kista. Se Bråket nr 19 sidan 10.

On 06–03 kl. 11.00–12.00. KTH/Nordita/SU Seminar in Theoretical Physics. Zhenhua Yu: *Short-range correlations and entropy in ultracold atomic Fermi gases.* Sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se sidan 7.

On 06–03 kl. 13.15. Algebra and Geometry Seminar. Håkan Granath: *Explicit rational models of Shimura curves.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

On 06–03 kl. 16.00. KTH/SU Mathematics Colloquium. Professor Jonathan P. Keating, University of Bristol: *Random matrices and number theory.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Kaffe/te serveras kl. 15.30 i pausrummet, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 4. Se sidan 7.

To 06–04 kl. 15.15–16.15. AlbaNova and Nordita Colloquium in Physics. Professor Bernhard Mehlig, Göteborgs universitet: *Collisions of particles suspended in turbulent flows.* Oskar Kleins auditorium, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se sidan 5.

Provföreläsningar för en tjänst vid KTH som universitetslektor i optimeringslära och systemteori

Dessa skall äga rum torsdagen den 28 maj. Se sidan 11.

KTH/NORDITA/SU SEMINAR IN THEORETICAL PHYSICS

José M. M. Senovilla:
What is the surface of a black hole?

Abstract: The exterior limit of a black hole is considered by studying the related concept, introduced by Penrose in the 1960's, of a closed trapped surface. The physical meaning of these surfaces and their relevance will be briefly analysed. Some surprising non-local properties will be presented. The natural candidates for the surface of a black hole, its event horizon or trapping horizons, have some problems: the former suffers from a global teleological problem, the latter will be seen to be crossed by closed trapped surfaces. Thus, the question of how to define the surface of a black hole may be related with the exterior boundary enclosing all closed trapped surfaces. Some examples will be given.

Tid och plats: Onsdagen den 20 maj kl. 11.00 – 12.00 i sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum.

ALGEBRA AND GEOMETRY SEMINAR

Vladimir Dotsenko:
Gröbner bases for operads

Abstract: Operads are well-known to provide a good language to discuss arbitrary algebraic structures. For every algebraic structure ("type of algebras"), identities satisfied in every algebra of that type can be used to define the corresponding operad via generators and relations. It is natural to ask whether one can develop the Gröbner bases machinery to study operads presented by generators and relations. In this talk, I shall explain how to do that. The key ingredient is a new approach to operads; being originally monoids in a certain monoidal category (category of collection with symmetric composition), they can be considered as monoids in a different category (nonsymmetric collections with a new monoidal structure — shuffle composition of collections).

The talk is based on a joint work with A. Khoroshkin.

Tid och plats: Onsdagen den 20 maj kl. 13.15 – 15.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

KTH/NORDITA/SU SEMINAR IN THEORETICAL PHYSICS

David Sherrington:
Physics and complexity

Abstract: This lecture will present a broad overview of complex macroscopic behaviour arising in many-body systems through the combination of competitive interactions and disorder, even with simple ingredients at the microscopic level. An attempt will be made to indicate and illustrate the richness that has arisen, in conceptual understanding, in methodology and in application, across a large range of scientific disciplines, together with a hint of some of the further opportunities that remain to be tapped. The perspective will be that of physics, trying to show how concepts and methodologies of physics have contributed and been stimulated.

Tid och plats: Onsdagen den 27 maj kl. 11.00 – 12.00 i sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum.

DNA-SEMINARIET UPPSALA-KTH (DYNAMICAL SYSTEMS, NUMBER THEORY, ANALYSIS)

Emmanuel Breuillard:
Equidistribution of dense subgroups of nilpotent Lie groups

Abstract: The question of equidistribution of Gamma orbits on a homogeneous space X has been thoroughly studied in recent years from many perspectives. In this talk I will tackle this question for Gamma a nilpotent group and X a nilpotent Lie group and consider two types of averages: the word length average and the random walk average. Using unique ergodicity and precise geometric information on the shape of nilpotent balls, I will show how to answer the equidistribution problem in that setting.

Tid och plats: Måndagen den 25 maj kl. 13.15 – 14.15 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

SEMINAR IN FLUID MECHANICS

Ramis Örlü:
Wall-bounded turbulent flows — revisited

Abstract: More than hundred years have passed, since the fundamental lecture by Ludwig Prandtl, in which he introduced his theory on the boundary layer. While considerable progress has been made over the last century, the simplest quantity, the mean streamwise velocity component, in the seemingly simplest flow cases, the fully developed channel and pipe flow as well as the zero pressure-gradient (ZPG) turbulent boundary layer (TBL), are still far from being understood. The seminar will review the classical understanding, in terms of the mean, root-mean-square (rms) and probability density function (pdf) of the streamwise velocity fluctuations, and touch more recent debates. Among these are the log vs. power law, the universality of the law of the wall, the Kármán constant, the near-wall and outer peak in the rms distribution and the universality of the pdf. Based on the most recent experimental and numerical databases some of the mentioned views will be revisited.

Tid och plats: Torsdagen den 28 maj kl. 10.30 i seminarierummet, Institutionen för mekanik, KTH, Teknikringen 8.

ALBANOVA AND NORDITA COLLOQUIUM IN PHYSICS

Bernhard Mehlig:
Collisions of particles suspended in turbulent flows

Abstract: Suspensions of small particles in a fluid ('aerosols') are ubiquitous in the natural world and in technology. Such systems may be unstable due to collisions of the suspended particles, giving rise to aggregation or to chemical reaction (for example, collision processes are fundamental to understanding the growth of rain droplets in clouds). It is an empirical fact that turbulence has a significant effect on such collision processes (determining their rate as well as the outcome of a collsion: fragmentation or coalescence). I summarize recent theoretical results concerning collision processes in turbulent aerosols.

Tid och plats: Torsdagen den 4 juni kl. 15.15 – 16.15 i Oskar Kleins auditorium, Roslagstullsbacken 21, AlbaNova universitetscentrum.

DNA-SEMINARIET UPPSALA-KTH (DYNAMICAL SYSTEMS, NUMBER THEORY, ANALYSIS)

Uri Shapira:

Applying dynamics to number theory

Abstract: I will present a recent joint work with Manfred Einsiedler and Lior Fishman, in which we use rigidity results in dynamics to prove results in Diophantine approximations. We study how certain fractals intersect certain Diophantine classes. In particular I plan to concentrate on the following theorem regarding the intersection of the middle third Cantor set and the set of "Well Approximable" numbers.

Theorem: Let a_n be a random sequence of the digits 0 and 2 (each digit appears with probability 1/2) and let x be the number in the unit interval having this sequence as its base three expansion. Then with probability one the coefficients in the continued fraction expansion of x are unbounded.

Tid och plats: Måndagen den 25 maj kl. 14.45 – 15.45 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

11'th STOCKHOLM-UPPSALA SYMPOSIUM IN MATHEMATICAL STATISTICS

Time and place: Wednesday, June 3, 2009, in room 14, house 5, Department of Mathematics, Stockholm University, Kräftriket.

Registration: Send an e-mail to Tom Britton (tomb@math.su.se). Please specify if you will attend the lunch (free for invited speakers and staff members) and if you have special food requests. Deadline for registration: Monday, May 25.

Conference fee: The conference is free of charge. The lunch has to be paid by "external participants".

Conference homepage: http://www2.math.su.se/~tomb/sto-upp11-2009.html.

Program

9.30 – 9.40 **Tom Britton,** SU: *Opening.*
9.40 – 10.30 **Hermann Thorisson,** Reykjavík: *Title to be announced.*
10.30 – 11.00 **Jonas Kiessling,** KTH: *Calibration and approximation of jump-diffusion processes in finance.*
11.00 – 11.30 Coffee.
11.30 – 12.00 **Sven Erick Alm,** UU: *Surprising (?) correlations in randomly oriented graphs.*
12.00 – 12.30 **Ola Hössjer,** SU: *Gene mapping by means of coalescence theory and ancestral recombination graphs.*
12.30 – 13.45 Lunch.
13.45 – 14.15 **Henrik Rehnlund,** UU: *Pólya urns and stochastic approximation.*
14.15 – 15.00 **Andrew Barbour,** Zürich: *Coupling epidemic and branching processes.*
15.00 – 15.30 Coffee.
15.30 – 16.00 **Maria Deijfen,** SU: *Invariant random graphs with prescribed iid degrees.*
16.00 – 16.30 **Henrik Hult,** KTH: *On efficient importance sampling for heavy-tailed processes.*
16.30 – 17.00 **Allan Gut, Timo Koski, Tom Britton:** *Aktiviteter (grundutbildning, forskarutbildning och forskning) under kommande läsår vid UU, KTH och SU.*

DNA-SEMINARIET UPPSALA-KTH (DYNAMICAL SYSTEMS, NUMBER THEORY, ANALYSIS)

Ben McReynolds: Geometric spectra

Abstract: In this talk, I will give a brief review of classical spectral geometry and the study of the geodesic length spectrum on a Riemannian manifold. I will then discuss some generalizations of the length spectrum and some results on how much of the geometry is encoded in other geometric spectra.

This is joint work with Alan Reid.

Tid och plats: Måndagen den 25 maj kl. 16.00 – 17.00 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

KTH/NORDITA/SU SEMINAR IN THEORETICAL PHYSICS

Zhenhua Yu:
Short-range correlations and entropy in ultracold atomic Fermi gases

Abstract: The correlations of atomic Fermi gases at short distances encapsulate essential thermodynamical information. We probe the finite temperature correlation through its relation to the free energy and entropy densities. In the low temperature limit the entropy is dominated by phonon excitations and the correlations increase as T^4. In the BEC limit, we calculate a boson model within the Bogoliubov approximation to show explicitly how phonons enhance the fermion correlations. In the high temperature limit, we show from the virial expansion that the correlations decrease as $1/T$. The correlations therefore reach a maximum at a finite temperature. We infer the general structure of the isentropes of the Fermi gas in the $T, -1/k_F a$ plane, and the temperature dependence of the correlations in the unitary, BEC, and BCS limits. Our results compare well with measurements of the correlations via photoassociation experiments at higher temperatures.

Tid och plats: Onsdagen den 3 juni kl. 11.00 – 12.00 i sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum.

KTH/SU MATHEMATICS COLLOQUIUM

Jonathan P. Keating:
Random matrices and number theory

Abstract: Over the last 35 years, evidence has accumulated hinting at profound connections between random unitary matrices and the theory of the Riemann zeta function. In recent years, a general understanding has developed which sets this in a much wider context, conjecturally linking a range of fundamental problems in number theory to properties of random matrices. This talk will be a survey of the some of the key ideas and developments.

Tid och plats: Onsdagen den 3 juni kl. 16.00 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Kaffe/te serveras kl. 15.30 i pausrummet, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 4.

DEBATT OM MATEMATIKENS ROLL I FINANSVÄRLDEN

Från derivata till derivat

Tid och plats: Tisdagen den 26 maj kl. 16.15 – 18.00 i sal D2, KTH, Lindstedtsvägen 5, b.v.

Det finansiella systemet är samhällets blodomlopp, vars funktion bygger på förtroende. I finanskrisens spår har uppmärksamhet fästs på de matematiska modeller finanssektorns aktörer använder. Modellerna är redskap för att bedöma risk och avkastning hos derivat eller finansiella instrument, vars värden är härledda från värdet av tillgångar (aktier, inteckningar i fastigheter, obligationer) vid derivatens omsättning på olika finansmarknader. Finansiell matematik handlar dock inte bara om modeller för dessa instrument, utan också om portföljval och riskhantering.

Nya sofistikerade slag av derivat i kombination med otillräcklig insikt hos aktörerna om de matematiska modellernas begränsningar kan ha bidragit till missbedömningar. Modellerna innefattar exempelvis partiella differentialekvationer, som Black och Scholes ekvation. Den ingick i den forskning som gjorde att Myron Scholes och Robert Merton fick Riksbankens pris till Nobels minne 1997.

Mot denna bakgrund kommer debatten att bl.a. behandla följande frågor:

- Hur uppfattas de matematiska modellerna av aktörerna? Är de ”autopiloter” som tros ge det rätta svaret eller ses de endast som en del i ”beslutsunderlaget”? Vad bör en klok användning innebära?
- Finanssektorn förvaltar stora resurser. Hur långt bör ansvaret för denna förvaltning bygga på vetenskaplig metodik? Hur långt har modellbyggarna ansvar för sina modeller?
- KTH och HHS utbildar i finansiell matematik. Finns det skäl för att i utbildningen diskutera hur den används? Hur kommer frågor om ansvar in om metodiken leder till felbedömningar?
- Hur uppstår, försvinner och återvinns förtroende för banksektorn?
- Vilka scenarier är sannolika respektive önskvärda när det gäller framtida matematisk modellering av risk och avkastning? Hur bör scenarier med låg sannolikhet betraktas?

Panel:
Professor Boualem Djehiche, Matematisk statistik, KTH.
Professor Tomas Björk, Finansiell ekonomi, Handelshögskolan.
Göran Collert, tidigare VD och ordförande i Föreningssparbanken, numera Swedbank.
Professor Kent Eriksson, Centrum för bank och finans, KTH.

Ordförande: **Professor Folke Snickars,** fakultetens dekanus.

Upplysningar: **Per Jacobsson,** e-post perjac@kth.se, telefon 08-790 95 55.

SEMINAR, ORGANIZED BY KTH GRANTS OFFICE

Anders Hedman:
The EU Framework Programme — A way to increased funding?

På sidan 9 i Bråket nr 19 meddelades att ovanstående seminarium skulle äga rum måndagen den 25 maj. Seminariet är ***inställt.***

ALGEBRA AND GEOMETRY SEMINAR

Christian Lundkvist:
Stable degenerations and the Fulton-MacPherson compactification

Abstract: For a smooth variety X over a ground field k the *configuration space* $F(X, n)$ parametrizes labelled collections of n points on X. The configuration space is defined as

$$F(X, n) = X^n \setminus \Delta$$

where X^n denotes the n-fold product and Δ is the diagonal locus where two or more points coincide. By repeatedly blowing up X^n at loci contained in Δ it is possible to create a compactification $X[n]$ of $F(X, n)$ called the *Fulton-MacPherson compactification.* The space $X[n]$ is not defined as a moduli space, but the boundary points of $X[n]$ have a geometric interpretation as so-called *stable n-pointed degenerations of X*. In the talk we will discuss our attempts at creating a moduli space of stable degenerations and relate this moduli space to the Fulton-MacPherson compactification.

Tid och plats: Onsdagen den 27 maj kl. 13.15 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

DISPUTATION I MATEMATIK

Henrik Strohmayer

skall disputera på avhandlingen

Prop profiles of compatible Poisson and Nijenhuis structures

tisdagen den 2 juni 2009 kl. 13.00 i sal 14, hus 5, Matematiska institutionen, SU, Kräftriket. Till opponent har utsetts *professor Gilles Halbout,* Université Montpellier 2.

Abstract of the thesis

A prop profile of a differential geometric structure is a minimal resolution of an algebraic prop, such that representations of this resolution are in one-to-one correspondence with structures of the given type. We begin this thesis with a detailed account of the algebraic tools necessary to construct prop profiles; we treat operads and props, and resolutions of these through Koszul duality.

Our main results can be summarized as follows.

Firstly, we contribute to the work of S. A. Merkulov on the prop profiles of Poisson and Nijenhuis structures. We prove that the operad of the latter prop profile is Koszul by showing that it has a PBW-basis, and we provide a geometrical interpretation of the former in terms of an L-infinity structure on the structure sheaf of a manifold.

Secondly, we construct prop profiles of compatible Poisson and Nijenhuis structures. Representations of minimal resolutions of props correspond to Maurer-Cartan elements of certain Lie algebras associated to the resolved props. Also the differential geometric structures are defined as solutions of Maurer-Cartan equations. We show the correspondence between props and differential geometry by providing explicit isomorphisms between these Lie algebras.

Thirdly, in order to construct the prop profiles of compatible Poisson and Nijenhuis structures we study operads of compatible algebraic structures. By studying Cohen-Macaulay properties of posets associated to such operads we prove the Koszulness of a large class of operads of compatible structures.

DYNAMICAL TRENDS IN ANALYSIS

Stockholm, May 27 – 30, 2009

This conference will focus on dynamical methods and ideas in analysis. Several world-leading experts will represent various aspects of the interaction between these subjects.

All talks will take place in room D2, KTH, Lindstedtsvägen 5, ground floor.

Scientific committee: L. Carleson, H. Eliasson, K. Johansson, P. Jones, M. Lyubich, S. Smirnov.

Organizing committee: K. Bjerklöv, A. Karlsson, M. Saprykina, S. Smirnov.

Conference web page: http://www.math.kth.se/dynamictrends/.

Wednesday, May 27

10.00 – 10.15 Registration.
10.15 – 10.25 **L. Carleson:** *Opening.*
10.30 – 11.20 **H. Eliasson:** *KAM for NLS.*
11.20 – 13.30 Lunch.
13.30 – 14.20 **J.-P. Eckmann:** *Title to be announced.*
14.30 – 15.20 **A. Kupiainen:** *Random weldings.*
15.20 – 15.50 Coffee.
15.50 – 16.40 **S. Smirnov:** *Quasiconformal maps and harmonic measure.*

Thursday, May 28

9.30 – 10.20 **K. Astala:** *Title to be announced.*
10.20 – 10.50 Coffee.
10.50 – 11.40 **N. Makarov:** *Ward identities in statistical mechanics and conformal field theory.*
11.40 – 13.30 Lunch.
13.30 – 14.20 **M. Zinsmeister:** *Variations of the Hausdorff dimension of quadratic Julia sets.*
14.30 – 15.20 **M. Sodin:** *Weighted exponential approximation on the real axis.*
15.20 – 15.50 Coffee.
15.50 – 16.40 **M. Jonsson:** *Polynomial dynamics in two complex dimensions.*
19.00 – Conference dinner.

Friday, May 29

9.30 – 10.20 **J. Graczyk:** *Title to be announced.*
10.20 – 10.50 Coffee.
10.50 – 11.40 **V. Baladi:** *Towards linear response for smooth one-dimensional dynamics — the Benedicks-Carleson case.*
11.40 – 13.30 Lunch.
13.30 – 14.20 **F. Przytycki:** *Equilibria and analyticity of geometric pressure for iteration of rational maps.*
14.30 – 15.20 **N. Sibony:** *On the dynamics of holomorphic foliations by Riemann Surfaces.*
15.20 – 15.50 Coffee.
15.50 – 16.40 **F. Ledrappier:** *Linear drift and noncommutative ergodic theorems.*

Saturday, May 30

9.30 – 10.20 **M. Viana:** *Absolute continuity, Lyapunov exponents, and rigidity.*
10.20 – 10.50 Coffee.
10.50 – 11.40 **P. Jones:** *Title to be announced.*
13.30 – Boat trip.

PLURIKOMPLEXA SEMINARIET

Berit Kemppe:
Maximal measures and minimal functions

Abstract: In this talk I will discuss maximality relative to an ordering of measures, which is connected to plurisubharmonic functions and Monge-Ampère measures. I will also describe how this maximality of measures is related to a notion of minimality for a class of plurisubharmonic functions.

Tid och plats: Tisdagen den 26 maj kl. 13.15 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

PROVFÖRELÄSNINGAR FÖR EN TJÄNST VID KTH SOM UNIVERSITETSLEKTOR I OPTIMERINGSLÄRA OCH SYSTEMTEORI

Föreläsningsämne: "Introduktion till linjärprogrammering", 20 minuter av ett inledande avsnitt i en fiktiv ny kurs om linjärprogrammering som ges för andraårsstudenter på elektroteknikprogrammet.

Tid och plats: Torsdagen den 28 maj kl. 10.00 – 11.25 i sal E2, KTH, Lindstedtsvägen 3, entréplanet.

Följande sökande skall hålla sina provföreläsningar:

Kl. 10.00 – 10.20: **Per Enqvist**
Kl. 10.30 – 10.50: **Amol Sasane**
Kl. 11.00 – 11.20: **Petter Ögren**

Efter sin provföreläsning skall varje sökande vara beredd att besvara frågor under fem minuter.
