BRÅKET

Information om seminarier och högre undervisning i matematiska ämnen i Stockholmsområdet

NR 6 **FREDAGEN DEN 13 FEBRUARI 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 19 februari kl. 13.00.

Disputation i matematisk statistik

Patricia Geli Rolfhamre skall disputera vid SU på avhandlingen *From Penicillin Binding Proteins to Community Interventions: Mathematical and Statistical Models Related to Antibiotic Resistance* fredagen den 27 februari kl. 13.00. Se sidan 7.

Money, jobs: Se sidorna 8 – 9.

SEMINARIER

Fr 02–13 kl. 12.15 – 13.00. Utbildningsseminarium i matematik. Martin Tamm, Matematiska institutionen, SU: *Upplägget av första terminens studier i matematik vid SU.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 5 sidan 6.

Må 02–16 kl. 14.15. Optimization and Systems Theory Seminar. (Joint seminar with Optimization and Systems Theory, Automatic Control, and Communication Networks.) Gianluca Antonio Rizzo: *Stability in networks of aggregate schedulers.* Rum Himmelriket, KTH, Osquldas väg 10, plan 8. Se sidan 3.

Ti 02–17 kl. 13.15. Plurikomplexa seminariet. Alan Sola, KTH: *Loewner chains and random growth processes.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 4.

Ti 02–17 kl. 14.00 – 15.00. Institut Mittag-Leffler Seminar. Klas Markström, Umeå universitet: *Random Cayley-like graphs.* Institut Mittag-Leffler, Auravägen 17, Djursholm. Se sidan 3.

Ti 02–17 kl. 15.30 – 16.30. Institut Mittag-Leffler Seminar. Alexander Holroyd, University of British Columbia, Vancouver: *Poisson matching.* Institut Mittag-Leffler, Auravägen 17, Djursholm. Se sidan 4.

Fortsättning på nästa sida.

Disputation i matematik

Andreas Enblom skall disputera vid KTH på avhandlingen *Properties of the Discrete and Continuous Spectrum of Differential Operators* fredagen den 27 februari kl. 14.00. Se sidan 6.

Belöning till Andreas Axelsson

Se sidan 2.

Seminarier (fortsättning)

On 02–18 kl. 10.30. Logikseminariet Stockholm-Uppsala. Peter Aczel, Manchester och SCAS: *Identity types and type setups.* Sal Eng 2-0022, Filosofiska institutionen, Uppsala universitet (vid Engelska parken). Se sidan 5.

On 02–18 kl. 11.00 – 12.00. KTH/Nordita/SU Seminar in Theoretical Physics. Thomas Konstandin, Barcelona: *CP violation in the bosonized Standard Model.* Sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se sidan 5.

On 02–18 kl. 13.15 – 14.15. Seminarium i analys och dynamiska system. Anders Szepessy, KTH: *Molecular dynamics derived from the time-independent Schrödinger equation.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 6.

To 02–19 kl. 10.15 – 12.00. Algebra and Geometry Seminar. *(Observera dagen och tiden!)* **Ivan Cheltsov:** *Simple subgroups of two-dimensional Cremona group.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 4.

To 02–19 kl. 14.00 – 15.00. Institut Mittag-Leffler Seminar. Ralph Neininger, J. W. Goethe-Universität, Frankfurt: *Probabilistic analysis of "Quickselect" and the contraction method.* Institut Mittag-Leffler, Auravägen 17, Djursholm. Se sidan 5.

To 02–19 kl. 15.15 – 16.15. AlbaNova and Nordita Colloquium in Physics. Professor Klaus Blaum, Max Planck Institute, Heidelberg: *High-accuracy Penning trap mass measurements on exotic ions for fundamental studies.* Oskar Kleins auditorium, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se Bråket nr 5 sidan 7.

To 02–19 kl. 15.30 – 16.30. Institut Mittag-Leffler Seminar. Johan Tykesson, Chalmers tekniska högskola, Göteborg: *Aspects of continuum percolation in hyperbolic space.* Institut Mittag-Leffler, Auravägen 17, Djursholm. Se sidan 8.

To 02–19 kl. 16.00. Guest lecture. Fanja Rakotondrajao, University of Antananarivo, Madagascar: *Polynomial classes of permutations avoiding exactly two patterns.* Sal 14, hus 5, Matematiska institutionen, SU, Kräftriket. Se sidan 8.

Fr 02–20 kl. 15.15 – 16.15. Matematiska kollokviet i Uppsala. Ralf Fröberg, SU: *Koszul algebras.* Häggsalen, Ångströmlaboratoriet, Uppsala universitet. Kaffe/te serveras utanför föreläsningssalen kl. 14.55. Se sidan 7.

On 02–25 kl. 16.00. KTH/SU Mathematics Colloquium. Professor Andrzej Zuk, Université Paris 7: *Title to be announced.* 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.

BELÖNING

Andreas Axelsson, forskarassistent vid Matematiska institutionen, SU, har av Kungl. Vetenskapsakademien belönats med Tage Erlanders pris för naturvetenskap och teknik för år 2009. Han får priset, som uppgår till 150 000 kronor, för sina insatser vid utvecklandet av funktionalkalkylen inom harmonisk analys, vilket ledde till beviset av Lions' förmodan.

Belöningen kommer att utdelas vid Vetenskapsakademiens högtidsdag den 31 mars 2009.

Låt oss gratulera Andreas till denna fina utmärkelse!

Mikael Passare

OPTIMIZATION AND SYSTEMS THEORY SEMINAR (JOINT SEMINAR WITH OPTIMIZATION AND SYSTEMS THEORY, AUTOMATIC CONTROL, AND COMMUNICATION NETWORKS)

Gianluca Antonio Rizzo:
Stability in networks of aggregate schedulers

Abstract: Some among the most widespread applications of the Internet (real-time streaming multimedia applications) are based on packet exchanges that assume a very low packet delay. In order to offer some form of better service to this kind of traffic, some architectural frameworks have been proposed, in which traffic sources obey some form of constraints on the maximum number of packets sent in every time interval, in which traffic is subdivided into classes, and where at any node all packets are served taking only into account the class to which they belong.

For these networks an open issue is their stability, that is the possibility to derive finite bounds to packet delay and queue size at each node. Existing results either imply very restricting assumptions on network settings (i.e. on topology, or packet size), or require an unacceptably low bound on maximum node load.

The focus of our research is on the derivation of good sufficient conditions for the stability of these networks, with very general assumptions on network settings. Using a deterministic approach based on the analysis of worst case behaviour, we first elaborated a general method to derive sufficient conditions for stability. We show how, with a proper choice of the observed parameters of the network and with the use of network calculus results, for these parameters it is possible to derive some upper bounds, whose properties are associated to the stability of the network. Exploiting our method, we derive a generalization of the "RIN result" (a well-known existing result, based on strong assumptions on the network) to heterogeneous settings and to leaky bucket constrained flows. Through some realistic examples, we show that the new sufficient conditions for stability in the generalized "RIN result" allow networks to achieve a level of utilization which is far larger than the best existing result. Finally, by applying our general method to three different variable classes, we derive some new sufficient conditions for stability which can be tested in polynomial time, and which perform largely better than all the known results. We show how all the main existing results can be derived from our new sufficient conditions.

Tid och plats: Måndagen den 16 februari kl. 14.15 i rum Himmelriket, KTH, Osquldas väg 10, plan 8.

INSTITUT MITTAG-LEFFLER SEMINAR

Klas Markström:
Random Cayley-like graphs

Abstract: Random Cayley graphs of a group have been used to construct expander graphs and to give bounds for graph properties and computer science applications. In this talk I will discuss a more general model of random graphs, based on latin squares, which includes both ordinary Cayley graphs, Cayley sum graphs, as well as new families of random graphs with dependent edges. I will discuss results for this model which I have obtained together with Demetres Christofides, compare this with the known results for random Cayley graphs, and point out some open problems.

Tid och plats: Tisdagen den 17 februari kl. 14.00 – 15.00 vid Institut Mittag-Leffler, Auravägen 17, Djursholm.

PLURIKOMPLEXA SEMINARIET

Alan Sola:
Loewner chains and random growth processes

Abstract: My talk will be divided into two parts. The first part will be an introduction to the theory of Loewner chains and the Loewner differential equation. I will include some simple examples and try to review some recent results.

In the second part of my talk, I will discuss ongoing joint work with F. Johansson (KTH) and A. Turner (Lancaster) concerning random growth models, defined in terms of Loewner chains in the exterior disk of the complex plane.

Tid och plats: Tisdagen den 17 februari kl. 13.15 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

INSTITUT MITTAG-LEFFLER SEMINAR

Alexander Holroyd: Poisson matching

Abstract: Red points and blue points occur as independent Poisson processes in $\mathbb{R}^d$, and we consider schemes to perfectly match red points to blue points in a translation-invariant way. For any matching scheme in dimensions 1 and 2, the distance X from a typical red point to its blue partner has infinite $d/2$-th moment, while in dimensions ≥ 3 there exist schemes where X has exponential tails. For the variant problem of matching points of a single colour to each other, there exist schemes where X has exponential tails, but if we insist that the matching is a deterministic factor of the points, then in dimension 1, X must have infinite mean. The Gale-Shapley stable marriage is a natural greedy matching scheme. It is close to optimal (in terms of X) for two-colour matching in dimension 1, but far from optimal for dimensions ≥ 3 and for one-colour matching.

The talk is based on joint work with Robin Pemantle, Yuval Peres and Oded Schramm.

Tid och plats: Tisdagen den 17 februari kl. 15.30 – 16.30 vid Institut Mittag-Leffler, Auravägen 17, Djursholm.

ALGEBRA AND GEOMETRY SEMINAR

Ivan Cheltsov:
Simple subgroups of two-dimensional Cremona group

Abstract: The two-dimensional Cremona group $\mathrm{Bir}(P2)$ is a group of birational selfmaps of the projective plane $P2$. It is generated by $\mathrm{PGL}(3, C) = \mathrm{Aut}(P2)$ and one birational involution that sends $[x : y : z]$ to $[1/x : 1/y : 1/z]$ (Cremona involution).

Finite subgroups of the two-dimensional Cremona group and their conjugate classes were studied by Iskovskikh, Dolgachev, Blanc, Beauville, de Fernex and others. They obtained almost complete classification. However, many questions are still open. In the first part of the talk, I explain a geometric approach to this problem in elementary terms.

In the second part of the talk, I will show how to classify all simple finite non-abelian subgroups in the two-dimensional Cremona group and answer to two questions posed by Dolgachev and Iskovskikh in their joint paper http://arxiv.org/abs/math/0610595.

Tid och plats: Torsdagen den 19 februari kl. 10.15 – 12.00 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

LOGIKSEMINARIET STOCKHOLM-UPPSALA

Peter Aczel:
Identity types and type setups

Abstract: In the first part of my talk I will review some of the rules for identity types that have been considered and discuss how they are related to each other when Pi and Sigma types are not available in the type theory.

In the second part of the talk I will introduce the notion of a type setup. This is an abstraction from the notion of a (dependent) type theory in which types and terms are abstract while contexts are kept as sequences of variable declarations. The notion is closely related to Peter Dybjer's notion of a category with families. But while that notion treats contexts as abstract objects of a category and is intended as giving a notion of possible mathematical semantics for type theories, the notion of a type setup is intended to capture an abstract syntactic notion of type theory at a more concrete level of abstraction. I believe that the notion of a type setup can be used to conveniently express some results of Richard Garner concerning identity contexts.

Tid och plats: Onsdagen den 18 februari kl. 10.30 i sal Eng 2-0022, Filosofiska institutionen, Uppsala universitet (vid Engelska parken).

KTH/NORDITA/SU SEMINAR IN THEORETICAL PHYSICS

Thomas Konstandin:
CP violation in the bosonized Standard Model

Abstract: I discuss the importance of CP violation (CPV) in cosmology and give some common arguments why it is believed that the CPV of the Standard Model cannot be sufficient to explain the observed baryon asymmetry. Then I go on to argue why these arguments might fail in an effective approach, where the quarks have been integrated out. I discuss in detail how to obtain the corresponding bosonic effective theory by using the worldline formalism with special emphasis on CP-violating operators. Finally I comment on the use of this effective theory in baryogenesis calculations.

Tid och plats: Onsdagen den 18 februari kl. 11.00 – 12.00 i sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum.

INSTITUT MITTAG-LEFFLER SEMINAR

Ralph Neininger:
Probabilistic analysis of "Quickselect" and the contraction method

Abstract: For the probabilistic analysis of recursive algorithms and random trees, in particular search trees, an approach based on probability metrics and contraction properties of associated maps between spaces of probability measures has been quite powerful in recent years.

In this talk some aspects of this approach are discussed mainly in connection with the analysis of the selection algorithm Quickselect. Also new functional limit laws (unfinished work) for adapted versions of the algorithm are presented.

Tid och plats: Torsdagen den 19 februari kl. 14.00 – 15.00 vid Institut Mittag-Leffler, Auravägen 17, Djursholm.

SEMINARIUM I ANALYS OCH DYNAMISKA SYSTEM

Anders Szepessy:
Molecular dynamics derived from the time-independent Schrödinger equation

Abstract: The usual way to derive molecular dynamics is to start from the time-dependent Schrödinger equation and use the time-dependent self-consistent field equations, Ehrenfest dynamics and the Born-Oppenheimer approximation; I will show the assumptions involved in these three steps and present a different (and simpler) derivation starting from the time-independent Schrödinger equation. The new derivation leads to accurate approximations of time-independent Schrödinger observables for a molecular system, in the limit of large ratio of nuclei and electron masses, without assuming that the nuclei are localized to vanishing domains. The derivation, based on characteristics for the Schrödinger equation, bypasses the usual separation of nuclei and electron wave functions and gives a different perspective on computation of observables, caustics and irreversibility, and stochastic electron equilibrium states in molecular dynamics simulations.

Tid och plats: Onsdagen den 18 februari kl. 13.15 – 14.15 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

DISPUTATION I MATEMATIK

Andreas Enblom

skall disputera på avhandlingen

Properties of the Discrete and Continuous Spectrum of Differential Operators

fredagen den 27 februari 2009 kl. 14.00 i sal F3, KTH, Lindstedtsvägen 26, b.v. Till opponent har utsetts *professor Alexei Ilyin,* Keldysh Institute of Applied Mathematics, Russian Academy of Sciences, Moskva.

Abstract of the thesis

This thesis contains three scientific papers devoted to the study of different spectral theoretical aspects of differential operators in Hilbert spaces.

The first paper concerns the magnetic Schrödinger operator $(i\nabla + A)^2$ in $L^2(\mathbb{R}^n)$. It is proved that given certain conditions on the decay of A, the set $[0, \infty)$ is an essential support of the absolutely continuous part of the spectral measure corresponding to the operator.

The second paper considers a regular d-dimensional metric tree Γ and defines Schrödinger operators $-\Delta - V$ on it. Here, V is a symmetric, non-negative potential on Γ. It is assumed that V decays like $|x|^{-\gamma}$ at infinity, where $1 < \gamma \leq d \leq 2$, $\gamma \neq 2$. A weak coupling constant α is introduced in front of V, and the asymptotics of the bottom of the spectrum as $\alpha \to 0+$ is described.

The third, and last, paper revolves around fourth-order differential operators in the space $L^2(\mathbb{R}^n)$, where $n = 1$ or $n = 3$. In particular, the operator $(-\Delta)^2 - C|x|^{-4} - V(x)$ is studied, where C is the sharp constant in the Hardy-Rellich inequality. A Lieb-Thirring inequality for this operator is proved, and as a consequence a Sobolev-type inequality is obtained.

MATEMATISKA KOLLOKVIET I UPPSALA

Ralf Fröberg: Koszul algebras

Abstract: If (R, m, k) is a local ring or a graded Noetherian k-algebra, then R is called Koszul if k has a linear minimal resolution. Starting with a combinatorial problem I present examples of Koszul algebras, discuss equivalent definitions of them and give a survey of known results.

Tid och plats: Fredagen den 20 februari kl. 15.15 – 16.15 i Häggsalen, Ångströmlaboratoriet, Uppsala universitet. Kaffe/te serveras utanför föreläsningssalen kl. 14.55.

DISPUTATION I MATEMATISK STATISTIK

Patricia Geli Rolfhamre

skall disputera på avhandlingen

From Penicillin Binding Proteins to Community Interventions: Mathematical and Statistical Models Related to Antibiotic Resistance

fredagen den 27 februari 2009 kl. 13.00 i sal 14, hus 5, Matematiska institutionen, SU, Kräftriket. Till opponent har utsetts *professor Bruce R. Levin,* Department of Biology, Emory University, USA.

Abstract of the thesis

Antibiotic resistance has become a major public health concern, and mathematical models are important analytical tools for the understanding, evaluation and prediction of the resistance problem and related control strategies.

The risk of emerging antibiotic resistance and selection has rarely been a concern in the design of antibiotic drug dosing regimens. In the first paper, a selection of antibiotic resistant subpopulations for different antibiotic dosing regimens was studied *in vitro.* The demonstrated complex relationship was influenced by both the rise of new mutants and a postantibiotic effect (PAE) (continued inhibition of bacterial growth after removal of the antibiotic drug). By constructing a mathematical model that incorporated biologically relevant parameters, we were able to assess the risks of resistance development under different dosing strategies.

In the second paper, the model for PAEs is further developed to determine the implications for different dosing regimens. The result challenges the conventional notion that long PAEs promote extended drug dosing intervals and it allows new hypotheses to be tested experimentally, based on the findings from the theoretical framework.

Since PAE experiments are often time-consuming and laborious, very few studies have been reporting variation for this phenomenon. In the third paper, an extension to capture the stochastic behaviour of bacterial population growth under drug exposure is made. The stochastic nature of the model is also an important complement to the existing deterministic models on drug dose drug effect relationships.

The last paper describes a controlled clinical intervention study aiming at determining whether the frequency of trimethoprim resistance in *E. coli* can be decreased by a sudden and drastic reduction in trimethoprim use. In addition to evaluating the intervention effect, the model, given estimated parameters, is also used for predicting other interesting outcomes.

INSTITUT MITTAG-LEFFLER SEMINAR

Johan Tykesson:
Aspects of continuum percolation in hyperbolic space

Abstract: Let us consider the Poisson Boolean model of continuum percolation in (for most of the talk) n-dimensional hyperbolic space. In this model balls are placed around a Poisson point process in the space. In this talk, we will discuss some different kind of phase-transitions that appears in this model. For example, if the radius R of the balls is big enough, then there is a double phase transition for the number of unbounded connected components. Connections with discrete percolation will be highlighted through the talk.

Part of the talk is based on a joint paper with Itai Benjamini, Johan Jonasson and Oded Schramm.

Tid och plats: Torsdagen den 19 februari kl. 15.30 – 16.30 vid Institut Mittag-Leffler, Auravägen 17, Djursholm.

GUEST LECTURE

Fanja Rakotondrajao:
Polynomial classes of permutations avoiding exactly two patterns

Abstract: The starting point of this work is the article *Permutation Classes of Polynomial Growth* by Albert, Atkinson and Birgnall. In that paper, the authors characterize sets Π such that the class of permutations avoiding the patterns of Π has polynomial growth. We study the case of the set Π having exactly two permutations: α increasing and β quasi-decreasing. We provide bounds for the degree Δ of the polynomial expressing the growth of the corresponding permutation class. We show that Δ grows at most linearly with respect to the size of α, whereas the upper bound provided by Albert et al. still left open the possibility that such dependency could be quadratic.

The talk is based on joint work with Mireille Bousquet-Mélou and Roberto Mantaci.

Tid och plats: Torsdagen den 19 februari kl. 16.00 i sal 14, hus 5, Matematiska institutionen, SU, Kräftriket.

MONEY, JOBS

Columnist: Johannes Lundqvist, Department of Mathematics, Stockholm University. E-mail: johannes@math.su.se.

Info = information. This will be given and repeated until obsolete. Rely on other sources as well.
BBKTH = Bulletin Board at the Department of Mathematics, KTH.
BBSU = Bulletin Board at the Department of Mathematics, SU.
The following information, with links, is also available at http://www2.math.su.se/~johannes/mj.html.
Unless stated otherwise, a given date is the last date (e.g. for applications), and the year is 2009. A number without an explanation is a telephone number.

Standard information channels

1. A channel to information from Vetenskapsrådet: http://www.vr.se/naturteknik/index.asp.
2. A channel to information from the European Mathematical Society: http://www.emis.de.
3. A channel to information from the American Mathematical Society: http://www.ams.org.
4. KTH site for information on funds: http://www.kth.se/aktuellt/stipendier.
5. Stockholm University site for information on funds: http://www2.su.se/forskning/stipendier/databas.php3.
6. Umeå site for information on funds: http://www.umu.se/umu/aktuellt/stipendier_fond_anslag.html.

(Continued on the next page.)

7. Job announcement site: http://www.maths.lth.se/nordic/Euro-Math-Job.html. This is run by the European Mathematical Society.
8. Stiftelsen för internationalisering av högre utbildning och forskning (STINT) site for information on funds: http://www.stint.se.
9. Nordisk Forskerutdanningsakademi (NorFA) site for information on funds: http://www.norfa.no.
10. Svenska institutet (SI) site for information on funds: http://www.si.se.

New information

Jobs to apply for

11. Helsingfors universitet söker två universitetslektorer i matematik. Utländska sökande behöver inte kunna tala finska eller svenska. Sista ansökningsdag är den 4 mars. Web-info: http://www.helsinki.fi/facultyofscience/vacancies/universitylecturer.html.

Old information

Money to apply for

12. Sigrid Arrhenius Stipendiefond utlyser ett stipendium om 65 000 kr som ekonomiskt stöd åt en lovande forskare vid Stockholms universitets Naturvetenskapliga fakultet som avser att avlägga doktorsexamen under åren 2009 eller 2010. Sista ansökningsdag är den 27 februari. Web-info: http://www.science.su.se/pub/jsp/polopoly.jsp?d=11800&a=56671.
13. C. F. Liljevalch j:ors stipendiefond utdelar stipendier till doktorander vid SU. Sista ansökningsdag är den 16 februari. Web-info: http://www.su.se/pub/jsp/polopoly.jsp?d=1125.
14. Vetenskapsrådet utlyser bidrag till anställning som postdok i Sverige. Bidraget skall ge möjlighet för forskare med svensk doktorsexamen eller med utländsk examen som bedöms motsvara doktorsexamen att vistas vid svensk högskola eller svenskt forskningsinstitut. Sista ansökningsdag är den 26 februari. Web-info: http://www.vr.se/huvudmeny/sokabidrag/vetenskapsradetsutlysningar/utlysningsvy.4.aad30e310abcb9735780004381.html?resourceId=-1873&languageId=1.
15. Vetenskapsrådet utlyser postdoktorsstipendium. Stipendierna skall ge möjlighet för forskare med svensk doktorsexamen eller examen från EUI (European University Institute) att vistas vid utländskt universitet eller forskningsinstitut. Sista ansökningsdag är den 26 februari. Web-info: http://www.vr.se/huvudmeny/sokabidrag/vetenskapsradetsutlysningar/utlysningsvy.4.aad30e310abcb9735780004381.html?resourceId=-1935&languageId=1.
16. Svenska matematikersamfundet utlyser resestipendier (Knut och Alice Wallenbergs stiftelses resefond och Mats Esséns minnesfond) avsedda för forskare som ej ännu avlagt doktorsexamen. Wallenbergsstipendierna (högst 3000 kr/person) är till för att utnyttjas som delfinansiering för konferensresor och kortare utlandsvistelser. Esséstipendierna (högst 6000 kr/person) är i första hand avsedda för deltagande i sommarskolor och liknande aktiviteter. Sista ansökningsdag är den 31 mars. Web-info: http://www.maths.lth.se/matematiklu/personal/dencker/resebidrag.html.
17. Stiftelsen Anna-Greta och Holger Crafoords fond utlyser bidrag och anslag för att främja grundforskning inom matematik och vissa naturvetenskaper. Såväl enskilda som institutioner kan beviljas medel för bland annat vetenskaplig verksamhet, vetenskapliga konferenser och inbjudan av utländska gästforskare. Bidrag och anslag delas ut företrädesvis till unga forskare. Sista ansökningsdag är den 1 mars. Web-info: http://www.kva.se/KVA_Root/swe/awards/scholarships/detail_scholarships.asp?grantsId=11&br=ns&ver=6up.

Jobs to apply for

18. Lunds Tekniska Högskola söker doktorander i matematisk statistik. Sista ansökningsdag är den 13 februari. Web-info: http://www3.lu.se/info/lediga/admin/document/PA2009-18.pdf.