BRÅKET

Information om seminarier och högre undervisning i matematiska ämnen i Stockholmsområdet

NR 29 **FREDAGEN DEN 24 SEPTEMBER 2004**

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 30 september kl. 13.00.

First Swedish-Israeli Control Conference

Denna äger rum vid KTH den 27 – 28 september. Se sidorna 4 – 5.

Kurs

Karl Meinke: Algebras + Coalgebras = Data Types + Systems. Se sidan 8.

SEMINARIER

Fr 09 – 24 kl. 13.00 – 14.00. Presentation av examensarbete i matematik. Viktor Blåsjö: *The Isoperimetric Problem.* Handledare: **Hans Rullgård.** Sal 16, hus 5, Matematiska institutionen, SU, Kräftriket. Se Bråket nr 28 sidan 5.

Må 09 – 27 kl. 13.15 – 15.00. Seminar in Analysis and its Applications. Vladimir Tkachev, Volgograd State University: *Entire solutions to quasilinear equations with quadratic nonlinearities.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 6.

Må 09 – 27 kl. 14.15 – 15.00. Seminarium i numerisk analys. Daniel Appelö, Nada, KTH: *Energy estimates for perfectly matched layers.* Rum 4523, Nada, KTH, Lindstedtsvägen 5, plan 5. Se sidan 5.

Må 09 – 27 kl. 15.00. Docentföreläsning. Lars Kjelldahl, Nada, KTH: *Vad ser vi i bilderna från datorgrafik och visualisering?* Sal D2, KTH, Lindstedtsvägen 5, b.v. Se Bråket nr 28 sidan 7.

Fortsättning på nästa sida.

Study Group on Zeta Functions in Dynamics and Algebraic Geometry

En studiecirkel med detta namn startar vid KTH den 28 september. Se sidan 7.

Disputation i matematisk statistik

Per Hallberg disputerar på avhandlingen *Gibbs Measures and Phase Transitions in Potts and Beach Models* fredagen den 24 september kl. 10.00 i Kollegiesalen, Administrationsbyggnaden, KTH, Valhallavägen 79. Se Bråket nr 27 sidan 5.

Money, jobs: Se sidorna 9 – 10.

Seminarier (fortsättning)

Må 09−27 kl. 15.15−16.15. DNA-seminariet Uppsala-KTH (Dynamics, Number theory, and Analysis). Martin Olbrich, Technische Universität Clausthal och Georg-August-Universität Göttingen: *Relations between length spectrum and topology of certain infinite volume hyperbolic manifolds.* Sal 3513, MIC, Polacksbacken, Uppsala universitet. Se Bråket nr 28 sidan 3.

Martin Olbrich kommer att besöka Uppsala universitet från måndagen den 27 september till onsdagen den 29 september. Observera att tiden för hans seminarium har ändrats. I Bråket nr 28 anges fel tid för seminariet.

Ti 09−28 kl. 14.00−15.00. Mittag-Leffler Seminar. Ilkka Norros, VTT Helsinki: *Large deviations for infinite intersections of events in Gaussian processes.* Institut Mittag-Leffler, Auravägen 17, Djursholm.

Ti 09−28 kl. 15.30−16.30. Mittag-Leffler Seminar. Krishanu Maulik, Eurandom, Eindhoven: *Tail asymptotics for exponential functionals of Lévy processes.* Institut Mittag-Leffler, Auravägen 17, Djursholm.

Ti 09−28 kl. 16.00−17.00. Study Group on Zeta Functions in Dynamics and Algebraic Geometry. Michael Björklund: *Some connections between dynamical zeta functions and transfer operators.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 7.

On 09−29 kl. 13.15−14.15. Seminarium i analys och dynamiska system. M. Shashahani, IPM, Tehran: *Multi-temporal wave equation on symmetric and locally symmetric spaces.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 28 sidan 7.

On 09−29 kl. 13.15. Algebra Seminar. Sergey Chulkov: *Hilbert's and Hilbert-Samuel's polynomials for a system of linear partial differential equations with constant coefficients.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se Bråket nr 28 sidan 7.

On 09−29 kl. 15.15. Seminarium i matematisk statistik. Mario Natiello, Matematikcentrum, Lunds universitet: *Stochastic population dynamics: the Poisson approximation.* Rum 306 (Cramérrummet), hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 4.

To 09−30 kl. 13.15−15.00. Algebra and Geometry Seminar. *(Extra seminarium. Observera dagen!)* **Sergei Lando,** Institute for System Research RAS and the Independent University of Moscow, Russia: *Applications of global theory of singularities to intersection theory of Hurwitz spaces and universal polynomials.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 3.

To 09−30 kl. 14.00−15.00. Mittag-Leffler Seminar. Vinod Sharma, Indian Institute of Science, Bangalore: *Providing quality of service in Internet.* Institut Mittag-Leffler, Auravägen 17, Djursholm.

To 09−30 kl. 15.30−16.30. Mittag-Leffler Seminar. Mats Pihlsgård, Lund University: *Loss rate for Lévy processes with two reflecting barriers.* Institut Mittag-Leffler, Auravägen 17, Djursholm.

Må 10−04 kl. 14.15−15.00. Seminarium i numerisk analys. Scott B. Baden, Department of Computer Science and Engineering, University of California, San Diego (on leave at KTH): *A method of local corrections for a highly scalable elliptic solver.* Rum 4523, Nada, KTH, Lindstedtsvägen 5, plan 5. Se sidan 8.

Fortsättning på nästa sida.

Seminarier (fortsättning)

Ti 10–05 kl. 15.30. Seminar in Theoretical and Applied Mechanics. Professor Anders Eriksson, Mekanik, KTH: *Musculoskeletal biomechanics seen as applied structural mechanics.* Institutionen för mekanik, KTH, Teknikringen 8. Se sidan 9.

Ti 10–05 kl. 16.00–17.00. Study Group on Zeta Functions in Dynamics and Algebraic Geometry. Christian Lundkvist: *Zeta functions in algebraic geometry and the Weil Conjectures.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 7.

Ti 10–05 kl. 17.00–18.00. Stockholms matematiska kollokvium. Professor Alexander Stolin, Chalmers tekniska högskola och Göteborgs universitet: *Fermat's Last Theorem and Kervaire-Murthy conjectures.* Sal 14, hus 5, Matematiska institutionen, SU, Kräftriket. Se sidan 9.

On 10–06 kl. 13.15–14.15. Seminarium i analys och dynamiska system. Dimitri Gioev, KTH: *Introduction to Random Matrix Theory.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 6.

To 10–07 kl. 14.00–16.00. Kollokvium i filosofi. Nicos Stavropoulos, University of Oxford: *Principles, laws and hypotheses.* Rum D255, Filosofiska institutionen, SU.

Må 10–11 kl. 13.15–14.15. DNA-seminariet Uppsala-KTH (Dynamics, Number theory, and Analysis). Dimitri Gioev, KTH: *Universality in Random Matrix Theory for orthogonal and symplectic ensembles.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 7.

ALGEBRA AND GEOMETRY SEMINAR

Sergei Lando: Applications of global theory of singularities to intersection theory of Hurwitz spaces and universal polynomials

Abstract: We suggest a new approach to the intersection theory on Hurwitz spaces, that is spaces of meromorphic functions on algebraic curves. This approach is based on the theory of universal polynomials, originating in the work by R. Thom in early 1960's and recently developed by M. Kazaryan. This theory allows one to express the cohomology classes, Poincaré dual to loci of singularities of a general holomorphic mapping $f : M \to N$, of given type, in terms of universal polynomials in the relative Chern classes of f. As a result, we shed a fresh light on the structure of the cohomology of Hurwitz spaces and obtain new enumeration results in the framework of the Hurwitz problem concerning enumeration of ramified coverings of the 2-sphere, with prescribed ramification type.

We hope that our approach will find a much wider domain of application and consider Hurwitz spaces as an important example where necessary tools useful in a general situation can be developed.

Tid och plats: Torsdagen den 30 september kl. 13.15–15.00 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

SEMINARIUM I MATEMATISK STATISTIK

Mario Natiello:
Stochastic population dynamics:
the Poisson approximation

Abstract: A formulation of the dynamics of a Markov jump process is presented, aiming to achieve a comprehensive understanding of the deterministic limit of stochastic processes and of the behaviour of population systems of finite (not arbitrarily large) size. Simple examples are discussed.

Tid och plats: Onsdagen den 29 september kl. 15.15 i rum 306 (Cramérrummet), hus 6, Matematiska institutionen, SU, Kräftriket.

Program

FIRST SWEDISH-ISRAELI CONTROL CONFERENCE

September 27 – September 28, 2004

Venue: Kollegiesalen, Administrationsbyggnaden, KTH, Valhallavägen 79, Stockholm.

Sunday, September 26

18.00 – 20.00 Reception at Pausrummet, Department of Mathematics, KTH, Lindstedtsvägen 15, Stockholm.

Monday, September 27

8.30 – 9.00 Registration.
9.00 – 9.10 Opening.
9.10 – 9.35 **Alexander Ioffe:** *Nonsmooth analysis and optimal control.*
9.35 – 10.00 **Paul A. Fuhrmann:** *Behaviour homomorphism and system equivalence.*
10.00 – 10.30 Coffee break.
10.30 – 10.55 **Damir Z. Arov:** *Generalized solutions of the Kalman-Yakubovich-Popov inequality for continuous-time systems.*
10.55 – 11.20 **Olof Staffans:** *Passive and conservative infinite-dimensional linear state/signal systems.*
11.20 – 11.45 **Leonid Mirkin:** *On the delay margin of dead-time compensators.*
11.45 – 12.10 **David Levanony:** *On the consistent filtering of convergent semimartingales.*
12.10 – 13.40 Lunch at Restaurant Syster & Bror, Drottning Kristinas väg 24, KTH.
13.40 – 14.05 **Harry Dym:** *An augmented basic interpolation problem.*
14.05 – 14.30 **Rolf Johansson:** *Observer-based Strict Positive Real (SPR) systems.*
14.30 – 14.55 **Jonas Sjöberg:** *Estimating independent parameterized plant and noise models in nonlinear processes: Possibilities of using linear model-on-demand in combination with instrumental variable techniques.*
14.55 – 15.25 Coffee break.
15.25 – 15.50 **Anders Lindquist:** *Kullback-Leibler approximation of spectral densities.*
15.50 – 16.15 **Karl-Henrik Johansson:** *Multi-robot coordination under limited communication.*
16.15 – 16.40 **Anton Shiriaev:** *Generating and controlling stable walking patterns in bipeds.*
16.40 – 16.50 Closure of day 1.
19.00 Banquet at Restaurant Syster & Bror, Drottning Kristinas väg 24, KTH.

(Continued on the next page.)

Tuesday, September 28

9.05 – 9.30 **Torkel Glad:** *Step responses of non-linear non-minimum phase systems.*
9.30 – 9.55 **Itzhack Y. Bar-Itzhack:** *Pseudo-linear Kalman filter and its application to spacecraft rate and attitude determination.*
9.55 – 10.20 **Itzchak Lewkowicz:** *Matrix sign function and the Nevanlinna-Pick interpolation.*
10.20 – 10.50 Coffee break.
10.50 – 11.15 **Zalman J. Palmor:** *A new automatic identifier and tuner for decentralized dead time compensators.*
11.15 – 11.40 **Håkan Hjalmarsson:** *Quantification of the variance error in estimated frequency functions.*
11.40 – 12.05 **Andrej Ghulchak:** *Robust stabilizability and unstable zero-pole cancellations — analysis and synthesis.*
12.05 – 12.30 **Arie Leizarowitz:** *Average-cost optimality for multichain MDP's, and overtaking optimality for unicost MDP's.*
12.30 – 14.00 Lunch at Restaurant Syster & Bror, Drottning Kristinas väg 24, KTH.
14.00 – 14.25 **Uri Shaked:** *Robust H_∞ output-feedback control.*
14.25 – 14.50 **Ulf Jönsson:** *On the robustness of oscillator networks.*
14.50 – 15.15 **Yaakov Oshman:** *A new estimation error lower bound for interruption indicators in systems with uncertain measurements.*
15.15 – 15.45 Coffee break.
15.45 – 16.10 **Xiaoming Hu:** *Active nonlinear state observers.*
16.10 – 16.35 **Ilya Ioslovich:** *Seasonal optimal control policy for growth of greenhouse lettuce while avoiding health hazards.*
16.35 – 16.45 Closure of the conference.

SEMINARIUM I NUMERISK ANALYS

Daniel Appelö:
Energy estimates for perfectly matched layers

Abstract: When computing a numerical solution to a wave propagation problem posed on an unbounded domain, it is necessary to truncate the unbounded domain so that the computed solution is confined to some finite computational domain. One method to truncate the unbounded domain is to surround the computational domain with a finite width, absorbing layer. Ideally, all waves travelling into the layer, independent of frequency or angle of incidence, should be absorbed to such extent that reflections at the outermost boundary are of no importance. Absorbing layers with these properties are usually referred to as Perfectly Matched Layers (PML). Many PML have adjustable parameters which can influence on the efficiency of the PML. Typically these parameters are chosen empirically. In order to choose such parameters, control parameters, a priori, it is important to have precise estimates of the solution inside the PML. In this talk we present and discuss energy estimates for two PML. The first is the PML suggested by Berenger for Maxwell's equations. The second is a PML suggested by Hagstrom for the linearized Euler equations.

Tid och plats: Måndagen den 27 september kl. 14.15 – 15.00 i rum 4523, Nada, KTH, Lindstedtsvägen 5, plan 5.

SEMINAR IN ANALYSIS AND ITS APPLICATIONS

Vladimir Tkachev:
Entire solutions to quasilinear equations with quadratic nonlinearities

Abstract: We answer in affirmative the recent question posed by Leon Simon (1994) concerning the existence of entire solutions to some class of quasilinear elliptic type PDE's. In fact, let $L[u] \equiv u''_{xx}(1+u'^2_x) + 2u''_{xy}u'_x u'_y + u''_{yy}(1+u'^2_y)$. We show that for any integer $N \geq 2$ there exists a (non-trivial) real analytic solution to $L[u_N] = 0$ which is defined in the whole plane and has a polynomial growth: $u_N \sim (x^2+y^2)^{a_N/2}$, where $a_N = N^2/(2N-1)$. We also extend this result on the so-called 'non-homogeneous' p-Laplacian equation with $p > 2$ (the case mentioned above corresponds to $p = \infty$). Some other connections of our problem to the algebraic properties of the quasiradial p-harmonic functions (which are the cones over the mentioned entire solutions) will also be discussed.

Tid och plats: Måndagen den 27 september kl. 13.15 – 15.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

SEMINARIUM I ANALYS OCH DYNAMISKA SYSTEM

Dimitri Gioev:
Introduction to Random Matrix Theory

Abstract: We will start by explaining briefly the main physical motivation for Random Matrix Theory (RMT), namely that it suggests a model that describes the statistical behaviour of energy levels of complex systems. There are three main types of ensembles of random matrices that are physically motivated: unitary, orthogonal, and symplectic. We will define the Unitary Ensemble of random matrices, introduce the basic probabilistic quantities of interest, and show how these quantities can be expressed in terms of orthogonal polynomials (OP's). We will then explain the idea of universality in RMT, and in particular introduce the appropriate scaling limit. Universality means that the statistical behaviour predicted by RMT should not depend on a particular choice of distribution of the matrix elements (which has no physical meaning), but should depend only on the type of symmetry imposed on the ensemble (in this case, unitary) which is physically meaningful. At this point it will be apparent that the proof of universality for Unitary Ensembles reduces to a study of asymptotics of the OP's. Such a study is possible due to the fact that the OP's solve a certain Riemann-Hilbert problem (RHP). Finally, we mention the appropriate RHP and the proof of universality for the unitary case. This talk can serve as a preparation for the talk to be given on October 11 (please see http://www.math.uu.se/~astrombe/DNA/DNA.html or this issue of Bråket page 7).

The second talk is on our recent joint work with Percy Deift on the proof of the Universality Conjecture for the other two cases, that is for the Orthogonal and Symplectic Ensembles of random matrices.

Tid och plats: Onsdagen den 6 oktober kl. 13.15 – 14.15 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

STUDY GROUP ON ZETA FUNCTIONS IN DYNAMICS AND ALGEBRAIC GEOMETRY

The zeroes of the Riemann zeta function give information about the distribution of primes. In other areas of mathematics, functions, similar in construction to the Riemann zeta function, can be defined, and these give information about the objects involved. For instance, in algebraic geometry, the Artin-Mazur zeta function relates periodic points of iterated morphisms on a variety to the number of zeroes of certain polynomials in finite fields. In dynamics, a generalized version of the Artin-Mazur zeta function, due to David Ruelle, gives a relationship between the zeroes and the spectrum of certain transfer operators.

Two introductory talks will be given on the dates below. The participants are then invited to give further talks in different areas suggested. This study group begins on September 28.

Michael Björklund:
Some connections between dynamical zeta functions and transfer operators

Tid och plats: Tisdagen den 28 september kl. 16.00 – 17.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

Christian Lundkvist:
Zeta functions in algebraic geometry and the Weil Conjectures

Tid och plats: Tisdagen den 5 oktober kl. 16.00 – 17.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

DNA-SEMINARIET UPPSALA-KTH (DYNAMICS, NUMBER THEORY, AND ANALYSIS)

Dimitri Gioev:
Universality in Random Matrix Theory for orthogonal and symplectic ensembles

Abstract: We give a proof of the Universality Conjecture in Random Matrix Theory (RMT) for orthogonal ($\beta = 1$) and symplectic ($\beta = 4$) ensembles in the scaling limit for a class of weights $w(x) = \exp(-V(x))$ on the line where $V(x)$ is a polynomial. (For such weights the associated equilibrium measure is supported on a single interval.) Our starting point is Widom's representation of the correlation kernels for the $\beta = 1, 4$ cases in terms of the unitary ($\beta = 2$) correlation kernel plus a correction. In the asymptotic analysis of the correction terms we use amongst other things differential equations for the derivatives of orthogonal polynomials (OP's) due to Tracy-Widom, and uniform Plancherel-Rotach type asymptotics for OP's due to Deift-Kriecherbauer-McLaughlin-Venakides-Zhou. The problem reduces to a small norm problem for a certain matrix of a fixed size that is equal to the degree of the polynomial potential.

The introductory talk to RMT is given on October 6, please see http://www.math.kth.se/~haakanh/Analysseminariet.html or this issue of Bråket page 6.

This is a joint work with Percy Deift (Courant Institute).

Tid och plats: Måndagen den 11 oktober kl. 13.15 – 14.15 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

SEMINARIUM I NUMERISK ANALYS

Scott B. Baden:
A method of local corrections
for a highly scalable elliptic solver

Abstract: If Terascale computing is to mature in the coming decade, then it must overcome the steadily increasing costs of interprocessor communication relative to that of arithmetic computation. Elliptic solvers are particularly challenging, owing to intrinsic global coupling. I present a method of local corrections for solving three-dimensional, second order elliptic equations with constant coefficients in an infinite domain. The method avoids high communication overheads algorithmically by taking advantage of regularity properties inherent to solutions to elliptic partial differential equations, trading off numerical overheads against communication. Communication overheads are low on 1024 processors of an IBM SP Power3 system — just 10 %. Computational overheads are modest and should enable this solver to scale to 256 K processors.

This is joint work with Greg Balls, Phillip Colella, and Peter McCorquodale.

Tid och plats: Måndagen den 4 oktober kl. 14.15 – 15.00 i rum 4523, Nada, KTH, Lindstedtsvägen 5, plan 5.

GRADUATE COURSE
IN THEORETICAL COMPUTER SCIENCE

Karl Meinke:
Algebras + Coalgebras = Data Types + Systems

The course is given at the Department of Numerical Analysis and Computer Science (Nada), KTH, during the time October 25 – December 18, 2004. It has number 2D5377 and gives 4 points. The course is of interest to theoretical computer scientists and logicians.

Course summary: Algebra and category theory have played a central role in the development of programming languages since the 1970's. From among the many contributions to these fields, we can discern two important lines of development:

1. Algebraic systems and the explication of the concept of abstract data type, data encapsulation and parameterization leading to the modern subject of object-orientation.
2. Algebraic automata theory leading to such areas as operational semantics and concurrency theory.

Underlying these two broad lines of development are two closely related, and often dual theories, *universal algebra* and *universal coalgebra.* We take as our course theme the view that algebras and coalgebras model static and dynamic aspects of systems. (Hence the title of our course, though this view is not entirely accurate.) We shall discuss the main features of these theories with reference to some of their computing applications such as initial algebra semantics, term rewriting and Knuth-Bendix completion, final coalgebra semantics, bisimulation and coinduction.

Further details about the course can be found at http://www.nada.kth.se/~karlm/algebra.htm.

Karl Meinke

SEMINAR IN THEORETICAL AND APPLIED MECHANICS

Anders Eriksson:
Musculoskeletal biomechanics
seen as applied structural mechanics

Abstract: The mechanics of the human body, and in particular musculoskeletal mechanics, is a truly trans-disciplinary subject, demanding cooperation between several branches of science and medicine. In recent years, the engineering methods of modelling and simulation have become important tools in understanding the area. Starting from structural mechanics, we have tried to develop our knowledge in the direction of this application area, but also to establish the necessary cooperations with other research groups. The presentation will focus on the contribution which we believe that our methods can give in joint efforts to improve understanding of the complex action of muscles. In particular, the talk will focus on the numerical modelling of muscle behaviour, the treatment of redundant force systems, and the solution of optimal path dynamics.

Tid och plats: Tisdagen den 5 oktober kl. 15.30 vid Institutionen för mekanik, KTH, Teknikringen 8.

STOCKHOLMS MATEMATISKA KOLLOKVIUM

Alexander Stolin:
Fermat's Last Theorem and Kervaire-Murthy conjectures

Abstract: In my talk I will explain that one and the same method of algebraic number theory can be used both in proofs of some cases of Fermat's Last Theorem and the Kervaire-Murthy conjecture in algebraic K-theory.

Tid och plats: Tisdagen den 5 oktober kl. 17.00 – 18.00 i sal 14, hus 5, Matematiska institutionen, SU, Kräftriket. Te och kaffe serveras kl. 16.30 i lunchrummet.

MONEY, JOBS

Columnist: Hans Rullgård, Department of Mathematics, SU. E-mail: hansr@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://www.math.su.se/~hansr/mj.html.
Unless stated otherwise, a given date is the last date (e.g. for applications), and the year is 2004. 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://www.su.se/forskning/stipendier/databas.php3.
6. Umeå site for information on funds: http://www.umu.se/umu/aktuellt/stipendier_fond_anslag.html.
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.

(Continued on the next page.)

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. Matematiska och systemtekniska institutionen vid Växjö universitet söker en doktorand i matematik/tillämpad matematik, 6 oktober. Info: Andrei Khrennikov, 0470-70 87 90, e-post Andrei.Khrennikov@msi.vxu.se, Mathias Hedenborg, 0470-70 86 38, e-post Mathias.Hedenborg@msi.vxu.se. Web-info: http://www.vxu.se/jobb/041006_doktorand_matematik.html.

Old information

Money, to apply for

12. Wenner-Gren Stiftelserna utlyser ett antal anslag och stipendier. Web-info: http://www.swgc.org/anvisningar.html.
13. Från stiftelsen P. E. Lindahls fond utdelas sex forskningsstipendier om vardera 120 000 kr. Stipendier utdelas för vetenskapliga studier eller fortsatt praktisk utbildning inom eller utom Sverige. Sökande skall ha avlagt doktorsexamen år 1998 eller senare eller vara behörig att antagas till forskarutbildning inom någon av de filosofiska eller medicinska fakulteterna i riket och får inte inneha tjänst hos stat eller kommun. Ansökan skall vara poststämplad senast den 30 september. Web-info: http://www.kva.se/KVA_Root/swe/awards/scholarships/detail_scholarships.asp?grantsId=15.
14. Hellmuth Hertz' Foundations postdoktorsstipendier vill ge yngre forskare möjlighet till vidareutbildning och forskning vid välrenommerat icke svenskt universitet (eller motsvarande) under en längre period (minst 6 månader). Stipendium är öppet för sökande som avlagt doktorsexamen högst 3 år före ansökningsdatum vid svenskt universitet eller teknisk högskola inom ämnesområdena naturvetenskap, medicin eller teknik. Sista ansökningsdag 30 september. Info: 046-13 25 28, e-post kansli@fysiografen.org. Web-info: http://www.fysiografen.org/.
15. Sweden-Japan Foundation (SJF) utlyser stipendier för studier, forskning samt examensarbete och praktik på högskolenivå i Japan. Stipendierna är främst avsedda för studier inom teknik, naturvetenskap, ekonomi, juridik, medicin och handel. Beslut fattas vid två tillfällen per år. Sista ansökningsdagar är den 1 mars och den 1 oktober. Info: SJF, 08-611 68 73. Web-info: http://www.swejap.a.se.
16. Från Knut och Alice Wallenbergs Stiftelse ställs anslag till rektors för KTH förfogande för att "i första hand användas till bidrag för sådana resor, som bäst befordrar ett personligt vetenskapligt utbyte till gagn för svensk forskning. Bidrag skall främst beviljas till yngre forskare. Medel kan även — efter rektors bedömning — undantagsvis disponeras för utländska gästforskare." Bidrag kan sökas under hela året. Info: Anette Nyström, 08-790 70 59. Web-info: se punkt 4 ovan.