BRÅKET

Information om seminarier och högre undervisning i matematiska ämnen i Stockholmsområdet

NR 18 **FREDAGEN DEN 8 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 14 maj kl. 13.00.

Disputation i matematik

Karl Rökaeus skall disputera på avhandlingen *Grothendieck Rings and Motivic Integration* fredagen den 15 maj kl. 10.00 i sal 14, hus 5, Matematiska institutionen, SU, Kräftriket. Se Bråket nr 17 sidorna 11 – 12.

Money, jobs: Se sidorna 9 – 10.

SEMINARIER

Fr 05–08 kl. 10.00. Licentiatseminarium i matematisk statistik. Susanna Björkwall presenterar sin licentiatavhandling: *Bootstrapping for claims reserve uncertainty in general insurance.* Inbjuden diskussionsinledare: **Professor Göran Högnäs,** Matematiska institutionen, Åbo Akademi. Rum 306 (Cramérrummet), hus 6, Matematiska institutionen, SU, Kräftriket. Se Bråket nr 17 sidan 9.

Fr 05–08 kl. 10.15 – 11.15. DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis). Michael Benedicks, KTH: *Kneading sequences for the Double Standard Map.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 17 sidan 10.

Må 05–11 kl. 9.15 – 10.00. Seminarium i finansiell matematik. *(Observera tiden!)* **Xia Guo** och **Tao Wang** presenterar sitt examensarbete: *Valuation of Life Insurance Contracts with Simulated Guaranteed Interest Rate.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 9.

Må 05–11 kl. 13.15. Seminar in Fluid Mechanics. *(Observera dagen, tiden och lokalen!)* **Zhensu She,** Peking University: *Universal hierarchical symmetry for turbulence and general multi-scale fluctuation systems.* Sal E36, KTH, Lindstedtsvägen 3, b.v. Se Bråket nr 17 sidan 9.

Fortsättning på nästa sida.

Disputation i matematik

Alexander Engström skall disputera på avhandlingen *Topological Combinatorics* fredagen den 8 maj kl. 13.00 i sal E2, KTH, Lindstedtsvägen 3, b.v. Se Bråket nr 16 sidan 3.

Seminarier (fortsättning)

Må 05–11 kl. 15.15 – 16.15. Matematiska kollokviet i Uppsala. *(Observera dagen!)* **Colin McLarty,** Case Western Reserve University: *Emmy Noether's first great mathematics.* Sal Å4001, Ångströmlaboratoriet, Uppsala universitet. Kaffe/te serveras utanför föreläsningssalen kl. 14.55. Se sidan 4.

Må 05–11 kl. 15.15 – 17.00. Seminarium i finansiell matematik. Professor Alexander J. McNeil, Department of Actuarial Mathematics and Statistics, Heriot-Watt University, Edinburgh: *From Archimedean to Liouville copulas.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 17 sidan 12.

Ti 05–12 kl. 13.15. Plurikomplexa seminariet. Alexander Engström, KTH: *Polytopes and integer points — what is going on?* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 4.

Ti 05–12 kl. 14.00 – 15.00. Institut Mittag-Leffler Seminar. Gregory Sorkin, IBM Research, Yorktown Hights: *Average-case analyses of Vickrey costs.* Institut Mittag-Leffler, Auravägen 17, Djursholm. Se sidan 5.

Ti 05–12 kl. 15.30 – 16.30. Institut Mittag-Leffler Seminar. Stanislav Volkov, University of Bristol: *Going through a passport control with wife, or sequential adsorption at extremes.* Institut Mittag-Leffler, Auravägen 17, Djursholm. Se sidan 6.

Ti 05–12 kl. 18.00. Populärvetenskaplig föreläsning i fysik. Magnus Axelsson, Astronomi, SU: *Svarta hål: Om universums mörkaste, och ljusaste, objekt.* Oskar Kleins auditorium, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se Bråket nr 17 sidan 12.

On 05–13 kl. 10.00 – 11.00. Presentation av examensarbete i matematik (15 högskolepoäng, grundnivå). **Kristoffer Vinell:** *A few inverse and optimal control problems stemming from Torricelli's law.* Handledare: **Martin Tamm.** Sal 21, hus 5, Matematiska institutionen, SU, Kräftriket. Se sidan 7.

On 05–13 kl. 11.00 – 12.00. KTH/Nordita/SU Seminar in Theoretical Physics. Mikko Alava: *Solution space in satisfiability problems.* Sal FA31, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se Bråket nr 17 sidan 10.

On 05–13 kl. 11.15 – 12.15. Presentation av examensarbete i matematik (30 högskolepoäng, avancerad nivå). **Allid Ferrow:** *Variations on the Art Gallery Theorem.* Handledare: **Paul Vaderlind.** Sal 21, hus 5, Matematiska institutionen, SU, Kräftriket. Se sidan 5.

On 05–13 kl. 13.15 – 14.15. Seminarium i analys och dynamiska system. Jeffrey Steif, Göteborg: *The dynamical circle covering problem.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 17 sidan 5.

On 05–13 kl. 13.15 – 15.00. Algebra and Geometry Seminar. Professor Johannes Nicaise, Laboratoire Painlevé, Université Lille 1: *A trace formula for varieties over a discretely valued field.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 8.

Professor Nicaise skall vara opponent vid Karl Rökaeus disputation. Se Bråket nr 17 sidorna 11–12.

Fortsättning på nästa sida.

Seminarier (fortsättning)

On 05–13 kl. 16.00. KTH/SU Mathematics Colloquium. Professor emeritus Harry Kesten, Cornell University: *The law of averages and trimmed random walk sums.* 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 8.

To 05–14 kl. 13.15 – 14.15. DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis). Elena Ushakova, Uppsala universitet: *Kernel operators with variable limits of integration in Lebesgue spaces.* Sal 64119, Ångströmlaboratoriet, Uppsala universitet. Se sidan 8.

To 05–14 kl. 14.00 – 15.00. Institut Mittag-Leffler Seminar. Martin Bender, University of Leuven: *Edge scaling limits for non-Hermitian random matrices.* Institut Mittag-Leffler, Auravägen 17, Djursholm. Se sidan 6.

To 05–14 kl. 15.15 – 16.15. AlbaNova and Nordita Colloquium in Physics. Professor Hugo Lagerkrantz, Karolinska Institutet: *The Big Bang of the human brain — on the making of the brain and the emergence of consciousness.* Oskar Kleins auditorium, Roslagstullsbacken 21, AlbaNova universitetscentrum. Se Bråket nr 17 sidan 11.

To 05–14 kl. 15.30 – 16.30. Institut Mittag-Leffler Seminar. Thomas Vallier, Institut Mittag-Leffler, Djursholm: *Spread of activation on* $G(n, p)$. Institut Mittag-Leffler, Auravägen 17, Djursholm. Se sidan 9.

Fr 05–15 kl. 11.00. DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis). Adrian Diaconu: *Moments of quadratic Dirichlet L-functions.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 6.

Må 05–18 kl. 15.30 – 16.30. SU/Nordita High Energy and Gravity Seminar. Ella Jamsin, Brussels: *Hidden symmetries as a black hole solution generating technique.* Rum A5:1041 (CoPS grupprum), AlbaNova universitetscentrum. Se sidan 4.

Ti 05–19 kl. 13.15 – 14.15. DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis). Maria Saprykina, KTH: *Title to be announced.* Sal 64119, Ångströmlaboratoriet, Uppsala universitet.

On 05–20 kl. 13.15 – 14.15. Seminarium i analys och dynamiska system. Adam Jonsson: *Title to be announced.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

On 05–20 kl. 13.15. Algebra and Geometry Seminar. V. Dotsenko: *Gröbner bases for operads.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

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 sidan 7.

MATEMATISKA KOLLOKVIET I UPPSALA

Colin McLarty:
Emmy Noether's first great mathematics

Abstract: Emmy Noether's first great mathematics was certainly not her 1908 dissertation! Yet it was before her conservation theorems and her 1920's algebra (let alone the applications in topology). It was her 1916 paper on invariants of finite groups — the one and only mathematical theme she would return to periodically throughout her career. Some people place it in the beginning of her Hilbert phase and surely she would not have done it without the Hilbert influence. But she opens by bragging that she gives an explicit calculation using none of the Hilbert apparatus and that it is radically quicker than the Hilbert existence proof for this case. It is her first step in the true theme of her career: She would unify her teacher Paul Gordan's symbolic constructivism with Sophus Lie and Felix Klein's geometric intuitionism and the new algebra of Richard Dedekind and Hilbert. In this way her program was not only a new algebra, but the algebraization of all mathematics.

Tid och plats: Måndagen den 11 maj kl. 15.15 – 16.15 i sal Å4001, Ångströmlaboratoriet, Uppsala universitet. Kaffe/te serveras utanför föreläsningssalen kl. 14.55.

PLURIKOMPLEXA SEMINARIET

Alexander Engström:
Polytopes and integer points — what is going on?

Abstract: There are natural connections between several subjects brought up at the pluricomplex seminar and discrete geometry. I will survey some fresh ideas (well — from the last ten years) about polytopes and their representations, not widely known outside the fields of convex and discrete geometry.

Tid och plats: Tisdagen den 12 maj kl. 13.15 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

SU/NORDITA HIGH ENERGY AND GRAVITY SEMINAR

Ella Jamsin:
Hidden symmetries as a black hole solution generating technique

Abstract: Over the past eight years, it has become clear that in spacetime dimensions $D > 4$, black holes are much more complex than in $D = 4$. Therefore powerful solution generating techniques are needed. An approach comes from the notion of hidden symmetries: upon reduction on a $(D-3)$-dimensional torus, some supergravities in D dimensions reveal a global symmetry under a finite Lie group G, which is larger than the expected $GL(D-3,R)$ isometry of the torus. This hidden symmetry can be used to construct new solutions of the D-dimensional theory. In this talk, I will focus on the case of five-dimensional minimal supergravity, which, in the presence of two commuting Killing vectors, reduces to three-dimensional gravity coupled to a non-linear sigma model which is invariant under the exceptional Lie group G_2. I will show how this provides a powerful method to construct black hole solutions in five dimensions.

Tid och plats: Måndagen den 18 maj kl. 15.30 – 16.30 i rum A5:1041 (CoPS grupprum), AlbaNova universitetscentrum.

INSTITUT MITTAG-LEFFLER SEMINAR

Gregory Sorkin:
Average-case analyses of Vickrey costs

Abstract: A Vickrey-Clarke-Groves (VCG) auction is a mechanism with the benefits of "truthfulness" and "social welfare maximization", but the drawback that its resulting cost can be unboundedly larger than the true cost.

We therefore explore the average-case behaviour of the Vickrey cost in three random settings:

- the Vickrey cost of a shortest path in a complete graph or digraph with random edge weights;
- the Vickrey cost of a minimum spanning tree (MST) in a complete graph with random edge weights; and
- the Vickrey cost of a perfect matching in a complete bipartite graph with random edge weights.

In each case, in the large-size limit, the Vickrey cost is precisely 2 times the (non-Vickrey) minimum cost, but this is the result of case-specific calculations, with no general reason found for it to be true.

Tid och plats: Tisdagen den 12 maj kl. 14.00 – 15.00 vid Institut Mittag-Leffler, Auravägen 17, Djursholm.

PRESENTATION AV EXAMENSARBETE I MATEMATIK

Allid Ferrow:
Variations on the Art Gallery Theorem

Handledare: **Paul Vaderlind.**

Abstract: In this thesis, we revisit the classical theory and results concerning art gallery problems. Different versions are presented, where e.g. type of guards, type of polygons, interior/exterior visibility are varied. We begin by showing Chvátal's classical result: $\lfloor n/3 \rfloor$ guards are required, and sometimes necessary, to cover a simple polygon with n vertices. Both the original proof, which is geometric, and Fisk's combinatorial proof are shown. We continue with showing that if we restrict ourselves to orthogonal polygons, then $\lfloor n/4 \rfloor$ guards suffice (and are sometimes necessary). One can choose to cover the exterior of the polygon instead, this is the so-called Fortress Problem. The Prison Yard Problem asks for both an exterior and an interior covering. For both cases we show that $\lceil n/2 \rceil$ guards are sufficient and sometimes necessary. What if the guards where more powerful? For example, we consider: edge guards, line guards and triangular guards. The edge guard problem still remains open, but in the other cases $\lfloor n/4 \rfloor$ guards are sufficient and sometimes necessary. We also describe the case when each guard is covered by another guard, to prevent ambush. This is referred to as the Guarded Guard Problem, we show that: $\lfloor (3n-1)/7 \rfloor$ are sufficient, and sometimes necessary in this case.

Tid och plats: Onsdagen den 13 maj kl. 11.15 – 12.15 i sal 21, hus 5, Matematiska institutionen, SU, Kräftriket.

INSTITUT MITTAG-LEFFLER SEMINAR

Stanislav Volkov:
Going through a passport control with wife, or sequential adsorption at extremes

Abstract: In a simple version of a cooperative sequential adsorption model, particles consecutively arrive on the set of vertices $\{1, 2, \ldots, M\}$, uniformly spaced on a circumference. A particle arriving at time $t = 0, 1, 2, \ldots$ gets attached to a vertex j with probability proportional to $\beta^{N(t,j)}$ where $N(t, j)$ is the number of particles already attached to the vertices in a certain neighbourhood of vertex j. Examples of such a neighbourhood are:

(1) the vertex itself and its left neighbour (asymmetric case);
(2) the vertex itself and its left and right neighbours (symmetric case).

We are interested in the long-time behaviour of this process. Our most recent results cover the cases when $\beta = 0$ and $\beta = +\infty$, the situations which can be quite naturally interpreted in a queueing theory setup.

The talk is based on joint work with Vadim Scherbakov.

Tid och plats: Tisdagen den 12 maj kl. 15.30 – 16.30 vid Institut Mittag-Leffler, Auravägen 17, Djursholm.

INSTITUT MITTAG-LEFFLER SEMINAR

Martin Bender:
Edge scaling limits for non-Hermitian random matrices

Abstract: The eigenvalue statistics at the edge of the spectrum of large random matrices from the Gaussian unitary ensemble (GUE) are described by the Airy point process, and the maximal eigenvalue is asymptotically Tracy-Widom distributed. In contrast, for the complex Ginibre ensemble (consisting of matrices with iid complex Gaussian entries), extreme eigenvalues behave like a Poisson process, and the maximal modulus (or maximal real part) of the eigenvalues converges to a Gumbel-distributed random variable.

In this talk, a family of ensembles interpolating between these models is considered, and we show how a non-trivial transition between Airy and Poisson statistics occurs for the eigenvalues near the edge of the spectrum.

Tid och plats: Torsdagen den 14 maj kl. 14.00 – 15.00 vid Institut Mittag-Leffler, Auravägen 17, Djursholm.

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

Adrian Diaconu:
Moments of quadratic Dirichlet L-functions

Abstract: This talk will present new developments in understanding the analytic continuation of certain Dirichlet series in several complex variables, associated to moments of quadratic Dirichlet L-functions.

Tid och plats: Fredagen den 15 maj kl. 11.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

PRESENTATION AV EXAMENSARBETE I MATEMATIK

Kristoffer Vinell:
A few inverse and optimal control problems stemming from Torricelli's law

Handledare: **Martin Tamm.**

Abstract: Torricelli's law is often mentioned in the literature at undergraduate level. Because of its generality and elegance, it can be applied to a wide range of outflow problems. However, in most contexts it is used only to describe the flow out of containers with constant cross-sectional area. In this thesis, the applications of Torricelli's law are extended to hold for almost any container of interest from a physical viewpoint.

In particular, we derive an ordinary differential equation that describes the flow from arbitrary containers. The ODE is applied to a few inverse problems, one of which involves finding the proper design for a water clock. In addition, we derive and solve an integral equation concerning flow rates by Laplace transformation.

The ODE is also applied to a few optimal control problems, where the objective is to find minimal emptying times. We use Pontryagin's minimum principle to find necessary conditions for optimality, and prove that an optimal control is of bang-bang type.

Tid och plats: Onsdagen den 13 maj kl. 10.00 – 11.00 i sal 21, hus 5, Matematiska institutionen, SU, Kräftriket.

KCSE SEMINAR

Anders Forsgren:
On the behaviour of the conjugate-gradient method on ill-conditioned problems

Abstract: The conjugate-gradient method is a well-known iterative method for minimizing a quadratic function where the Hessian is positive definite. In this talk, we discuss some aspects of the method that may be less well-known. In particular, we study the behaviour of the conjugate-gradient method on ill-conditioned problems, for which the Hessian has one set of eigenvalues that are large and the remaining are small.

Our motivation is twofold: first, interior methods, where infinitely ill-conditioned matrices arise, and second, radiation therapy optimization, where ill-conditioned systems arising from discretized Fredholm equations of the first kind arise. We characterize the behaviour of the residuals associated with the large eigenvalues throughout the iterations, and also characterize the behaviour of the residuals associated with the small eigenvalues for the early iterations. Our results show that the residuals associated with the large eigenvalues are made small first, without changing very much the residuals associated with the small eigenvalues.

Subsequently, the residuals associated with the small eigenvalues are reduced.

The motivation for this research comes from radiation therapy optimization.

Tid och plats: Onsdagen den 20 maj kl. 14.30 – 15.30 i rum RB15, Roslagstullsbacken 15, AlbaNova universitetscentrum.

ALGEBRA AND GEOMETRY SEMINAR

Johannes Nicaise:
A trace formula for varieties over a discretely valued field

Abstract: The motivic Serre invariant of a smooth and proper variety X over a discretely valued field K was introduced by Loeser and Sebag. It is equal to the class of the special fibre of a weak Néron model of X in a certain Grothendieck ring of varieties over the residue field of K. The motivic Serre invariant can be seen as a measure for the set of unramified points on X. We will show that, if X satisfies an appropriate tameness condition, the motivic Serre invariant admits a cohomological interpretation by means of a trace formula. We will discuss some applications for abelian varieties and algebraic tori.

Tid och plats: Onsdagen den 13 maj kl. 13.15 – 15.00 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

KTH/SU MATHEMATICS COLLOQUIUM

Harry Kesten:
The law of averages and trimmed random walk sums

Abstract: We investigate what takes the place of the law of averages (also known as the "strong law of large numbers") when the underlying random variables do not have a finite expectation. We concentrate on results which do not make any a priori moment assumptions. We describe the set of accumulation points of a normalized random walk. We find a criterion for the existence of a law of the iterated logarithm for a random walk. Finally, we investigate the effect on the strong law of large numbers of removing a bounded number of the random summands.

Tid och plats: Onsdagen den 13 maj 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.

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

Elena Ushakova:
Kernel operators with variable limits of integration in Lebesgue spaces

Abstract: We study $L^p - L^q$ boundedness and compactness of the operator $f \to w(x)\int_{a(x)}^{b(x)} k(x,y)f(y)v(y)dy$ with given weight functions $w(x)$, $v(y)$, differentiable strictly increasing border functions $a(x)$, $b(x)$ and a kernel $k(x,y)$ satisfying some growth conditions. The results are applied for weighted $L^p - L^q$ boundedness of the geometric mean operator $f \to \exp[(b(x)-a(x))^{-1}\int_{a(x)}^{b(x)} \log f(y)dy]$ and other related problems.

The talk is based on U.U.D.M. Reports 2008:30 and 2008:46.

Tid och plats: Torsdagen den 14 maj kl. 13.15 – 14.15 i sal 64119, Ångströmlaboratoriet, Uppsala universitet.

SEMINARIUM I FINANSIELL MATEMATIK

Xia Guo och **Tao Wang**

presenterar sitt examensarbete:

Valuation of Life Insurance Contracts with Simulated Guaranteed Interest Rate

Abstract: We use Black and Scholes options theory to obtain market valuation of typical life insurance contracts. The contracts are specified as in Grosen & Lochte Jorgensen (2001), but with a slight extension where the guaranteed rate is simulated from market models of short interest rate, such as Vasicek, Cox-Ingesoll-Ross and Ho-Lee models. Another extension is that we assume that the guaranteed rate is equal to the risk free interest rate. Except the above extensions, we keep other factors of the model similar as Grosen & Lochte Jorgensen (2001). First, the liability holders have prior claim for company asset than equity holders. Second, a regulatory mechanism is added into the model in order to reduce insolvency risk. Finally, we derive valuation formulas and give numerical examples for initial fair contracts and market values of contracts at different time points.

Tid och plats: Måndagen den 11 maj kl. 9.15 – 10.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

INSTITUT MITTAG-LEFFLER SEMINAR

Thomas Vallier:
Spread of activation on $G(n,p)$

Abstract: We consider a spread of activation on the Erdös-Rényi random graph $G(n,p)$ from a set of activated vertices $A(0)$ with size $|A(0)|$ depending on n. Any vertex which is linked to at least 2 activated vertices becomes activated. We describe and analyse the process of activation. We find for any probability $p(n) \gg 1/n$ the critical size of $A(0)$ for which the total number of activated vertices $|A(n)|$ varies from $o(n)$ to $n - o(n)$. We also treat the case $p(n) = c/n$ which shows a different behaviour.

This is a joint work with Svante Janson, Tomasz Luczak and Tatyana Turova, still in progress at the institute.

Tid och plats: Torsdagen den 14 maj kl. 15.30 – 16.30 vid Institut Mittag-Leffler, Auravägen 17, Djursholm.

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.

(Continued on the next page.)

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.
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

Money to apply for

11. Stiftelsen P. E. Lindahls fond utlyser två stipendier om vartdera 100 000 kr för studier inom de naturvetenskapliga ämnena. Tidigare har prioritering givits till nydisputerade forskare samt till seniora forskare som är i behov av bidrag till fortsatt utbildning, exempelvis i form av resa till eller vistelse vid annat universitet. Sista ansökningsdag är den 31 augusti. Web-info: http://www.kva.se/KVA_Root/swe/awards/scholarships/detail_scholarships.asp?grantsId=15.

Jobs to apply for

12. Lunds universitet söker en doktorand i matematik. Tjänsten är placerad vid Matematikcentrum, Lunds Tekniska Högskola. Det egna forskningsarbetet skall ske i tillämpad matematik, i gränslandet mellan bildanalys/datorseende och reglerteknik. Sista ansökningsdag är den 27 maj. Web-info: http://www3.lu.se/info/lediga/admin/document/PA2009-1620.pdf.
13. Biostokastikum vid Sveriges lantbruksuniversitet, Umeå, söker en forskarassistent i matematisk statistik. Sista ansökningsdag är den 18 maj. Web-info: http://biostochastics.slu.se/aktuellt/lasmer.cfm?136.

Old information

Jobs to apply for

14. Lunds universitet söker en biträdande universitetslektor (associate senior lecturer) i matematisk statistik med inriktning mot statistiska metoder och modeller inom biologi och medicin. Sista ansökningsdag är den 31 juli. Web-info: http://www3.lu.se/info/lediga/admin/document/PA2009-1148.pdf.
15. Institutionen för matematik vid KTH söker vikarierande lektorer i matematik. Anställningarna är tidsbegränsade till 6 – 12 månader från och med den 1 juli 2009. Sista ansökningsdag är den 20 maj. Web-info: http://www.math.kth.se/lektorsvik.20090520.pdf.
16. Institutionen för matematik vid KTH söker doktorander i matematik. Sista ansökningsdag är den 22 maj. Web-info: http://www.math.kth.se/doktorand_vt09.html.
17. Linköpings universitet söker en professor i beräkningsvetenskap. Sista ansökningsdag är den 8 maj. Web-info: http://www.liu.se/jobbdb/show.html?2827.
18. Karlstads universitet söker en universitetslektor i matematikdidaktik. Sista ansökningsdag är den 11 maj. Web-info: http://www.kau.se/om-universitetet/lediga-tjanster?to_do=detail&tjanst_id=2044.
19. Karlstads universitet söker en professor i matematikdidaktik. Sista ansökningsdag är den 11 maj. Web-info: http://www.kau.se/om-universitetet/lediga-tjanster?to_do=detail&tjanst_id=2043.
20. Lunds universitet söker en eller två doktorander i matematisk statistik. Sista ansökningsdag är den 8 maj. Web-info: http://www3.lu.se/info/lediga/admin/document/PA2009-1208eng.pdf.
21. Uppsala universitet söker en professor i matematisk statistik. Sista ansökningsdag är den 15 maj. Web-info: http://www.math.uu.se/inform/vacant.php.