BRÅKET

Information om seminarier och högre undervisning i matematiska ämnen i Stockholmsområdet

NR 36 **FREDAGEN DEN 12 NOVEMBER 1999**

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 18 november
kl. 13.00.

Disputation i matematik

Daniel Bertilsson disputerar vid KTH på avhandlingen *On Brennan's conjecture in conformal mapping* måndagen den 22 november kl. 13.15. Se sidan 8.

Money, jobs, conferences

Se sidorna 9 – 12.

SEMINARIER

Fr 11–12 kl. 9.00 – 10.00. Kollokvium i fysik. Professor Paul-Henri Heenen, Université Libre de Bruxelles: *The stability of super-heavy nuclei — a theoretical perspective.* Sal F01, Fysiska institutionen, KTH, Lindstedtsvägen 24, b.v. Se Bråket nr 35 sidan 7.

Fr 11–12 kl. 11.00 – 12.00. Optimization and Systems Theory Seminar. Andrey Ghulchak, Lunds tekniska högskola: *Robust controller design via linear programming.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 4.

Fr 11–12 kl. 13.15. Licentiatseminarium i matematik. Charles Favre: *Classification of 2-dimensional contracting rigid germs and Kato surfaces.* Granskare vid seminariet: **Professor Mikael Passare,** Matematiska institutionen, SU. Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

Fr 11–12 kl. 15.15 – 17.00. Potentialanalysseminarium. Olga Kouznetsova: *On geometric and asymptotic properties of the solutions to the Hele-Shaw equation.* Sammanträdesrummet (innanför lunchrummet), Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 4. Se Bråket nr 35 sidan 5.

Observera att lokalen för Olga Kouznetsovas seminarium har ändrats. I Bråket nr 35 anges fel lokal för seminariet.

Må 11–15 kl. 10.15 – 12.00. Algebraic Geometry Seminar and Combinatorics Seminar. Sergey Fomin, University of Michigan, MIT, and St. Petersburg: *On quantum Schubert calculus of the flag manifold.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 35 sidan 6.

Fortsättning på nästa sida.

Seminarier (fortsättning)

Må 11–15 kl. 13.15 – 15.00. Algebraseminarium. Mats Boij: *Betti number strata of the space of codimension three Gorenstein Artin algebras.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket, Roslagsvägen 101. Se sidan 4.

Ti 11–16 kl. 13.15 – 15.00. Seminarium i PDE och spektralteori. Boris Shapiro, SU: *Generalized Rolle's theorems for polynomials and symmetric functions.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 4.

Ti 11–16 kl. 13.15. Seminarium i fysik. Ansar Fayyazuddin: $N = 2$ *superconformal field theories from intersecting M5-branes.* Rum 4809, Fysikum, SU. Se sidan 5.

Ti 11–16 kl. 14.15 – 15.15. Mittag-Leffler Seminar. Christian Berg, Copenhagen: *Generalized Hermite polynomials and discrete ladder operators.* Institut Mittag-Leffler, Auravägen 17, Djursholm.

On 11–17 kl. 10.15 – 12.00. Combinatorics Seminar. Boris Shapiro: *On contractibility of standard strata in the space of polynomials with real zeros.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 5.

On 11–17 kl. 10.30 – 11.30. Analysseminarium. Yuri Demkov, St. Petersburg University: *Adiabatic approximation and systems of first order differential equations with a small factor at the derivative.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket, Roslagsvägen 101. Se sidan 5.

On 11–17 kl. 14.15 – 15.15. Dynamiska systemseminariet. *(Observera tiden!)* **Mikhail Dzugutov,** NADA, KTH: *Entropy scaling in liquid dynamics.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 6. Internet-adressen till information om seminariet är http://www.math.kth.se/math/research/dynsyst.

On 11–17 kl. 16.00 – 17.00. Stockholms matematiska kollokvium. Sergey Fomin, University of Michigan, MIT, and St. Petersburg: *Total positivity criteria and matrix factorization.* Sal 14 (Gradängsalen), hus 5, Matematiska institutionen, SU, Kräftriket, Roslagsvägen 101. Kaffe och kakor serveras kl. 15.30 i rum 216, hus 6. Se sidan 3.

To 11–18 kl. 13.15. Algebraic Geometry Seminar. Lars Ernström: *Stable reduction of curves over* $\mathbb{C}$. (Fortsättning från seminariet den 4 november.) Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 34 sidan 6.

To 11–18 kl. 13.15. Waveletseminarium. Gunnar Peters: *Numerical methods for crack problems.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 6.

To 11–18 kl. 14.15 – 15.15. Mittag-Leffler Seminar. Torbjörn Lundh, Göteborg: *Geodesics on Riemann surfaces and their limit points.* Institut Mittag-Leffler, Auravägen 17, Djursholm.

To 11–18 kl. 15.45 – 16.45. Mittag-Leffler Seminar. Visa Latvala, Joensuu: *On the continuity of weak solutions of non-linear non-uniformly elliptic PDE's.* Institut Mittag-Leffler, Auravägen 17, Djursholm.

Fortsättning på nästa sida.

Seminarier (fortsättning)

Fr 11–19 kl. 15.15 – 17.00. Potentialanalysseminarium. Harold Shapiro: *Some inverse problems relating to the equilibrium distribution.* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 7.

Må 11–22 kl. 15.15 – 17.00. Seminarium i matematisk statistik. Lars Holst: *Extremvärden och samlarproblem.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 8.

On 11–24 kl. 10.15. Seminar in Theoretical and Applied Mechanics. Leif Kari, Marcus Wallenberg laboratoriet för ljud- och vibrationsforskning, KTH: *On fractional derivatives models of solids.* Seminarierummet, Institutionen för mekanik, KTH, Osquars Backe 18. Se sidan 6.

On 11–24 kl. 13.00 – 15.00. Seminarium i statistik. Janne Jonsson, SOFI: *Levnadsnivåundersökningarna — en kort presentation.* Rum B705, Statistiska institutionen, SU. Se Bråket nr 34 sidan 8.

Observera att dagen för Janne Jonssons seminarium har ändrats. I Bråket nr 34 och nr 35 anges fel dag för seminariet.

Fr 11–26 kl. 9.00 – 10.00. Kollokvium i fysik. Professor Sven-Olof Enfors, Institutionen för bioteknologi, KTH: *Biotechnology.* Sal F01, Fysiska institutionen, KTH, Lindstedtsvägen 24, b.v.

STOCKHOLMS MATEMATISKA KOLLOKVIUM

Sergey Fomin:
Total positivity criteria and matrix factorization

Abstract: A matrix is called *totally positive* if all its minors are positive. The phenomenon of total positivity has been extensively studied since the 1930's, due to the role it plays in areas as diverse as enumerative combinatorics, stochastic processes, electric networks, oscillation in mechanical systems, and representation theory.

The first part of the talk will address the following questions. How many minors of an n by n matrix must be tested, so that their positivity would imply the total positivity of the matrix? How to construct such minimal total positivity criteria?

I will then discuss a related problem of factoring an invertible square matrix into the minimal number of "elementary factors". The solutions of these problems involve combinatorics of reduced words and pseudo-line arrangements, together with a family of biregular automorphisms of "double Bruhat cells" in the general linear group.

This is joint work with Andrei Zelevinsky (Northeastern).

Tid och plats: Onsdagen den 17 november kl. 16.00 – 17.00 i sal 14 (Gradängsalen), hus 5, Matematiska institutionen, SU, Kräftriket, Roslagsvägen 101. Kaffe och kakor serveras kl. 15.30 i rum 216, hus 6.

Till skillnad från de traditionella seminarierna är kollokviet avsett för en bred publik. Meningen är att föreläsningarna skall vara begripliga exempelvis för intresserade doktorander i matematik och samtidigt hålla en hög vetenskaplig klass. Det kan vara föredrag av översiktskaraktär eller belysande djuplodningar med tonvikten på idéerna mer än formaliteterna. Vår strävan är att anlita erkänt goda föredragshållare, och föreläsningstiden är sextio minuter.

OPTIMIZATION AND SYSTEMS THEORY SEMINAR

Andrey Ghulchak:
Robust controller design via linear programming

Abstract: The result concerns the particular case of a linear dependence of the closed-loop characteristic polynomial on an uncertain parameter. In this case the convex parametrization of all robustly stabilizing controllers is obtained. The algorithm proposed is a sequence of the standard linear programming problems of growing dimension which approximate the original problem. Then the standard free software (e.g. PCX package) can be used to solve the problem.

The finite-dimensional approximation gives us only the lower bound of the uncertainty radius. However, using the convex duality arguments the dual problem to the uncertainty radius optimization is derived. It has mainly the form of H_1 optimization. It is shown that the dual problem can be solved in the same linear programming framework as the primal one. It gives the upper bound of the uncertainty radius. So, running both the primal and dual algorithms, one can maximize the bound with a prespecified accuracy.

Tid och plats: Fredagen den 12 november kl. 11.00 – 12.00 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

ALGEBRASEMINARIUM

Mats Boij: Betti number strata
of the space of codimension three Gorenstein Artin algebras

Abstract: We compute the dimensions of the strata parametrizing graded codimension three Gorenstein Artin algebras with given generator and relation degrees.

Tid och plats: Måndagen den 15 november kl. 13.15 – 15.00 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket, Roslagsvägen 101.

SEMINARIUM I PDE OCH SPEKTRALTEORI

Boris Shapiro: Generalized Rolle's theorems
for polynomials and symmetric functions

Abstract: The usual Rolle's theorem says that between two consecutive zeros of a function, one can always find at least one zero of its derivative. Are there any other restrictions on the relative position of zeros of some function and its derivatives of some order? The answer is negative if one takes all smooth functions. But if one restricts consideration to polynomials, then one finds interesting funny-looking Rolle's type results. Here is the simplest one. Consider a polynomial p of degree 4 with 4 real roots: $a_1 < a_2 < a_3 < a_4$. Let $b_1 < b_2 < b_3$ be the roots of p'; $c_1 < c_2$ be the roots of p'' and, finally, d_1 be the only root of p'''. Try to prove that the pair of inequalities $a_2 < c_1$ and $a_3 < c_2$ imply $b_2 < d_1$. We will discuss different generalizations of the above observation, as well as some intriguing properties of polynomials divisible by their derivatives.

Tid och plats: Tisdagen den 16 november kl. 13.15 – 15.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

SEMINARIUM I FYSIK

Ansar Fayyazuddin:
$N = 2$ superconformal field theories from intersecting M5-branes

Abstract: I will describe new supergravity solutions of intersecting M5-branes, which are related by Maldacena duality to $N = 2$ superconformal field theories in four dimensions.

Tid och plats: Tisdagen den 16 november kl. 13.15 i rum 4809, Fysikum, SU.

COMBINATORICS SEMINAR

Boris Shapiro: On contractibility of standard strata in the space of polynomials with real zeros

Abstract: In [SW] following the patterns of [Ar] and [Va], we associated to any Young diagram $\lambda = (\lambda_1, \ldots, \lambda_k)$ of area n the subspace Hyp_λ in the space of all monic real polynomials of degree n, which is the closure of the set of polynomials with real roots of multiplicity $\lambda_1, \ldots, \lambda_k$. We show that each Hyp_λ is homotopically equivalent to a double suspension of a certain natural simplicial complex Δ_λ and give some sufficient conditions of collapsability of Δ_λ in terms of the so-called resonances in λ.

References:

[Ar] V. I. Arnold, *The spaces of functions with mild singularities,* Funct. Anal. and Appl. **23** (1989), no. 3.

[Bj] A. Björner, *Subspace arrangements,* First European Congress of Mathematics **I** (1992), 321 – 370, Prog. Math., 119, Birkhäuser, Basel, 1994.

[Va] V. A. Vassiliev, *Complements of discriminants of smooth maps: Topology and Applications,* Vol. 98, Trans. of Math. monographs, 1992.

[SW] B. Shapiro and V. Welker, *Combinatorics and topology of stratification of the space of monic polynomials with real coefficients,* Result. Math. **33** (1998), 338 – 355.

Tid och plats: Onsdagen den 17 november kl. 10.15 – 12.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

ANALYSSEMINARIUM

Yuri Demkov: Adiabatic approximation and systems of first order differential equations with a small factor at the derivative

Abstract: Adiabatic invariants in classical mechanics. Adiabatic theorem by Born and Fock in quantum mechanics. The Landau-Zener approximation and the analyticity concept. The adiabatic integral and its extension over the complex time plane. Stuekelberg approximation. Multichannel extension by Demkov and Osherov, and factorization of the S-matrix. Generalized Landau-Zener problem and the steepest term transition phenomenon. Doubly periodical in time and energy system (Demkov, Kurasov, Ostrovsky). The "Bow-tie" model, its generalization, interpretation, and the unsolved problem of the factorization criteria.

Tid och plats: Onsdagen den 17 november kl. 10.30 – 11.30 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket, Roslagsvägen 101.

DYNAMISKA SYSTEMSEMINARIET

Mikhail Dzugutov:
Entropy scaling in liquid dynamics

Abstract: In spite of the recent progress of kinetic theory, atomic dynamics in dense fluids still eludes quantitative universal description. This talk discusses a recently developed concept, whereby the liquid dynamics is related to the thermodynamic excess entropy. I present molecular dynamics simulations, demonstrating that the entropy scaling can be applied to two quantities characterizing the liquid dynamics: the self-diffusion coefficient and the Kolmogorov-Sinai entropy. The latter can be regarded as a measure for the loss of information about the state of a dynamical system. The entropy scaling approach is useful for understanding the anomalous dynamics and ergodicity breaking in supercooled liquids approaching glass transition.

Tid och plats: Onsdagen den 17 november kl. 14.15 – 15.15 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

WAVELETSEMINARIUM

Gunnar Peters:
Numerical methods for crack problems

Abstract: In a series of papers the speaker has, together with Johan Helsing at the Department of Solid Mechanics, demonstrated that problems in planar elasticity can be solved with high precision. It is worth mentioning that previous algorithms produce solutions with only a few correct digits. Our method consists of careful mathematical analysis of the equations. We reformulate the equations into a numerically stable form at the same time as speed is considered. One of the main ingredients is the use of integral equations of the second kind. I will show how this is done.

Tid och plats: Torsdagen den 18 november kl. 13.15 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

SEMINAR IN THEORETICAL AND APPLIED MECHANICS

Leif Kari:
On fractional derivatives models of solids

Abstract: A unified, fully three-dimensional, coordinate free viscoelastic material model with fractional-order derivatives is presented. The model covers several examples, such as the generalized Maxwell, mini-oscillator, and earlier proposed fractional derivative model — as special cases. The two last examples minimize the material parameter number with a preserved broad frequency domain measurement agreement. The latter having sound bases in polymer viscoelasticity molecular theory, while including a whole discrete damping mechanism spectra in a single continuous relaxation time distribution. The underlying physical and mathematical theories are briefly discussed.

Tid och plats: Onsdagen den 24 november kl. 10.15 i seminarierummet, Institutionen för mekanik, KTH, Osquars Backe 18.

POTENTIALANALYSSEMINARIUM

Harold Shapiro: Some inverse problems relating to the equilibrium distribution

Abstract: This talk is for the most part based on joint work in progress with P. Ebenfelt and D. Khavinson.

Suppose S is a sphere in $\mathbb{R}^n$ (usually, especially when a "physical" interpretation is intended, I will assume $n = 3$). It is "physically obvious" and easy to prove rigorously that, if S is conceived as made of infinitely thin conducting material and placed in empty space, an electrical charge introduced upon it will redistribute itself into equilibrium "uniformly", that is the charge on any portion of S will be proportional to its area. Quite remarkably, and surprisingly to most people, there are other shapes of S which also have this property; but there are none which are *smooth* — that this property of smooth surfaces is indeed possessed only by spheres was apparently first conjectured by P. Gruber, and proven in 1997 by Wolfgang Reichel.

Our work was undertaken in ignorance of Gruber's conjecture (and Reichel's paper), in an effort to prove this very fact; this we did not succeed to do, and we are indebted to Henrik Shahgholian for directing us to the relevant literature. It turned out however that, in our efforts we turned up some other related results, which seem of interest and are presumably new.

If we assume that S is a smooth surface bounding a topological ball which (without loss of generality) contains the closed unit ball, then inversion of S with respect to the unit sphere gives a new smooth surface S' lying inside the unit ball and enclosing the origin O. It is easy to check that the property of S, that its equilibrium distribution be uniform with respect to surface area, is reflected in the following property of S': The harmonic measure on S' with respect to O has a density with respect to surface area on S' that is proportional to the inverse cube of distance from the origin (in dimension 3). Thus, this interesting property of harmonic measure also characterizes spheres among smooth closed surfaces (in view of Reichel's theorem).

Now, what happens if we change the "inverse cube" hypothesis to "inverse k-th power", for some real k? For k not exceeding 2, one can show, refining an argument due to Henrik Shahgholian, that the only smooth solutions are spheres. This leaves a gap when $k > 2$, where so far only Reichel's theorem is available (for the case $k = 3$).

For the analogous problems in two dimensions we have found a complete solution: If harmonic measure on the (smooth) boundary of a Jordan domain with respect to its interior point O has a density with respect to arc length, proportional to inverse k-th power of distance from O, then the domain is a disk, except for the values $k = 3, 4, 5, \ldots$, and in these cases there are counterexamples!

There are also analogous inverse problems, to characterize *ellipses* rather than spheres, by their equilibrium distributions, and I will say something about these if time permits.

Tid och plats: Fredagen den 19 november kl. 15.15 – 17.00 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

DISPUTATION I MATEMATIK

Daniel Bertilsson

disputerar på avhandlingen

On Brennan's conjecture in conformal mapping

måndagen den 22 november 1999 kl. 13.15 i Kollegiesalen, Administrationsbyggnaden, KTH, Valhallavägen 79. Till fakultetsopponent har utsetts *professor Walter Hayman,* Imperial College, London.

Abstract of the thesis

Let f be a one-to-one analytic function in the unit disc with $f'(0) = 1$. Brennan's conjecture states that for every $\varepsilon > 0$

$$(*) \qquad \int_0^{2\pi} \left|f'(re^{i\theta})\right|^{-2} \mathrm{d}\theta = O\big((1-r)^{-1-\varepsilon}\big)$$

We do some work on the following reformulations, which we prove are equivalent.

$$(1) \qquad \int_0^{2\pi} \left|f'(re^{i\theta})\right|^{-2} \mathrm{d}\theta \le \frac{C}{1-r}\,, \text{ where } C \text{ is an absolute constant.}$$

We propose the stronger conjecture that (for fixed r) the integral is maximized when f is the Koebe function $z(1+z)^{-2}$. To support this, we show that the Koebe function is a local maximum in the sense that analytic variations of the omitted arc decrease the integral.

$$(2) \qquad \text{If } p \ge 2, \text{ the MacLaurin coefficients of } (f')^{-p} \text{ grow like } O(n^{p-1}).$$

We show that if $n \le 2p+1$, then the nth coefficient is maximized when f is the Koebe function. The proof is similar to de Branges' proof of the Bieberbach conjecture. As a consequence we get sharp estimates for certain higher-order Schwarzian derivatives of f. These are used to show that (*) holds with $\varepsilon = 0.547$. Earlier it was known that one can take $\varepsilon = 0.601$.

$$(3) \qquad \text{The Carleson-Makarov conjecture about } \beta\text{-numbers: } \sum \beta_j^2 \le 1.$$

We show the existence of extremal domains Ω for the sum $\sum_1^n \beta_j^p$, and use the second variation to prove that the boundary of Ω consists of trajectories of a quadratic differential which has no multiple zeros on the boundary of Ω. We also prove some estimates of extremal length, that give geometric criteria for a point to have positive β-number. This is related to the angular derivative problem.

SEMINARIUM I MATEMATISK STATISTIK

Lars Holst:
Extremvärden och samlarproblem

Sammanfattning: Eulers respektive Gauss' definition av Gammafunktionen motsvaras av olika representationer av den största av oberoende exponentialvariabler. Extremvärden kan också användas för att studera kupongsamlarproblem, både för fixa och stokastiska dragningssannolikheter. Sådant kommer att behandlas. Inga omfattande förkunskaper i sannolikhetsteori förutsätts.

Tid och plats: Måndagen den 22 november kl. 15.15 – 17.00 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

MONEY, JOBS, CONFERENCES

Columnist: Pär Holm, Department of Mathematics, SU. E-mail: pho@matematik.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.
Unless stated otherwise, a given date is the last date (e.g. for applications), and the year is 1999. A number without an explanation is a telephone number.

Standard information channels

1. A channel to information from TFR: http://www.tfr.se.
2. A channel to information from NFR: http://www.nfr.se.
3. A channel to information from the European Mathematical Society: http://www.emis.de.
4. A channel to information from the American Mathematical Society: http://www.ams.org.
5. KTH site for information on funds, etc., weekly: http://www.admin.kth.se/info/kth-kalendern/stipendier.html.
6. Stockholm University site for information on funds: http://www.sb.su.se/stipendier/.
7. Umeå site for information on funds: http://www.umu.se/umu/veckoprogram/aktstip99.html.
8. Job announcement site: http://www.maths.lth.se/nordic/Euro-Math-Job.html. This is run by the European Mathematical Society.
9. KTH site for information on research: http://www.admin.kth.se/CA/extrel/index/forsk.html.

New information

Jobs, to apply for

10. Institutionen för matematik vid Luleå tekniska universitet utlyser en doktorandtjänst i matematik inom ämnet homogenisering av stokastiska partiella differentialoperatorer, 18 november. Info: Thomas Gunnarsson, 0920-918 50, Thomas.Gunnarsson@sm.luth.se, eller Lars-Erik Persson, 0920-911 17, Lars-Erik.Persson@sm.luth.se. Web-info: http://www.sm.luth.se/math/matl/matl2.html.
11. Stokastiskt centrum vid sektionen för matematik och datavetenskap vid Chalmers tekniska högskola utlyser doktorandtjänster i matematisk statistik med tillämpning inom bildbehandling och extremvärdesmetoder inom ingenjörsvetenskaperna, 25 november. Info: Holger Rootzén, 031-772 35 78, rootzen@math.chalmers.se, eller Mats Rudemo, 031-772 35 75, rudemo@math.chalmers.se. Web-info: http://www.math.chalmers.se/Centres/SC/doktorander.html.
12. Institutionen för industriell teknologi vid Mitthögskolan i Örnsköldsvik utlyser en doktorandtjänst inom projektet "matematisk modellering inom skogsindustrin", 30 november. Info: Mårten Gulliksson, 0660-578 30, marten@ind.mh.se, eller Johan Saltin, 0660-578 23. Web-info: http://www.mh.se/jobb/FSCN991028.html.
13. Institutionen för numerisk analys och datalogi vid KTH söker en professor i tillämpad numerisk analys, 3 december. Info: Ingrid Melinder, 08-790 77 98, melinder@nada.kth.se, eller Viggo Kann, 08-790 62 92, viggo@nada.kth.se. Web-info: http://www.admin.kth.se/info/tjanster/Nada.html.
14. Centrum för bildanalys vid Uppsala universitet utlyser en doktorandtjänst i matematik eller bild- och fjärranalys, 6 december. Info: Örjan Smedby, 013-22 27 17, orjan.smedby@imv.liu.se, Gunilla Borgefors, 018-471 34 66, gunilla@cb.uu.se, eller Christer Kiselman, 018-471 32 16, kiselman@math.uu.se. Web-info: http://www.cb.uu.se/.

Conferences, etc.

15. Conference on Number Theory and Spectral Theory, December 3 – 4, University of Aarhus, Denmark. URL: http://www.maphysto.dk/events/NTandST1999/.

(Continued on the next page.)

16. 5ta Reunion de Didactica de las Matematicas, January 10 – 14, 2000, Universidade Santiago, Chile. URL: http://www.fermat.usach.cl/didact5.

17. The Sixth International Symposium on Effective Methods in Algebraic Geometry (MEGA 2000), June 20 – 24, 2000, Bath University, United Kingdom. URL: http://www.maths.bath.ac.uk/CONFERENCES/mega2000/.

18. 18th International Conference on Operator Theory, June 27 – July 1, 2000, University of the West, Timisoara, Romania. URL: http://www.imar.ro/conferences/conf.html.

19. Numerical Modelling in Continuum Mechanics, July 31 – August 4, 2000, Prague, Czech Republic. URL: http://www.karlin.mff.cuni.cz/katedry/knm/nmicm2000.

Old information

Money, to apply for

20. Forskningsråden NFR, TFR och MFR beräknas även år 2000 erhålla särskilda medel för gästprofessurer för kvinnor. NFR tar nu emot förslag till innehavare av gästprofessurer för kvinnor inom naturvetenskap och matematik under läsåret 2000/01, förslagen skickas före 20 november. Info: Gunnar Leman, 08-454 42 08. Web-info: se punkt 2 ovan.

21. Institut Mittag-Leffler utlyser ett antal stipendier för 2000/01. Dessa är avsedda för nyblivna doktorer eller forskarstuderande nära examen. Ämnet för året är matematisk logik. 31 januari 2000. Info: Kjell-Ove Widman, widman@ml.kva.se, eller Viggo Stoltenberg-Hansen, viggo@math.uu.se. Se Bråket nr 35 sidan 6.

22. Anslag ställs, från Knut och Alice Wallenbergs Stiftelse, 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." Ansökan om resebidrag skall ställas till rektors kansli. Bidrag kan sökas när som helst under året. Info: se punkt 5 ovan.

23. Nordisk Forskerutdanningsakademi (NorFA) finansierar nordiskt samarbete inom forskning och forskarutbildning genom dels personliga stipendier (mobilitetsstipendier och för deltagande i nationella forskarutbildningskurser), dels anslag till institutioner (forskarutbildningskurser, nordiska nätverk, gästprofessurer och workshops). Info: http://www.norfa.no.

24. Svenska Institutet (SI) utlyser kontinuerligt stipendier och bidrag för studier och forskning utomlands: stipendier för Europastudier, internationella forskarstipendier, Östersjöstipendier, Visbyprogrammet, m.m. Aktuell information om SI:s samtliga stipendiemöjligheter och ansökningshandlingar finns på SI:s hemsida: http://www.si.se.

25. Stiftelsen för internationalisering av högre utbildning och forskning (STINT) utlyser medel för att främja samarbete med universitet och högskolor i Republiken Korea (Sydkorea), Taiwan, Hongkong, Indonesien och Egypten. Ansökningar skall inlämnas minst 6 – 8 veckor före verksamhetsstarten, och medlen kan sökas löpande under året. Info: STINT, Skeppargatan 8, 114 52 Stockholm, 08-662 76 90. Web-info: www.stint.se.

26. Wenner-Gren Stiftelserna utlyser gästföreläsaranslag för gästföreläsningar. Anslag sökes av svensk forskare som önskar inbjuda utländsk forskare. Ansökan kan inlämnas när som helst under året. Web-info: http://www.wenner-grenstift.a.se.

27. NUTEK stipends for stay in research institutions (not universities) in Japan. Short or long periods. For persons with or almost with doctoral degree. Info: Kurt Borgne, 08-681 92 65, kurt.borgne@nutek.se. You can apply any time.

Jobs, to apply for

28. Institutionen för teknik i Trollhättan vid Högskolan Trollhättan/Uddevalla söker en professor i tillämpad matematik, 15 november. Info: Göran Olsson, 0520-47 50 03, Goran.Olsson@adm.htu.se, eller Svante Nyström, 0520-47 50 34, Svante.Nystrom@thn.htu.se. Web-info: http://www.htu.se/nyheter/.

29. Matematikcentrum vid Lunds tekniska högskola söker minst tre universitetslektorer i matematik, 17 november. Info: Gunnar Sparr, 046-222 85 28, Gunnar.Sparr@math.lth.se, eller Lars-Christer Böiers, 046-222 85 62, Lars-Christer.Boiers@math.lth.se. Web-info: http://www2.lth.se/ledjobb/larare/index.asp.

30. Matematikcentrum vid Lunds tekniska högskola söker minst en universitetslektor i matematisk statistik, 17 november. Info: Ulla Holst, 046-222 85 49, Ulla.Holst@matstat.lu.se. Web-info: http://www2.lth.se/ledjobb/larare/index.asp.

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31. Matematikcentrum vid Lunds tekniska högskola söker minst en universitetslektor i numerisk analys, 17 november. Info: Gustaf Söderlind, 046-222 49 09, Gustaf.Soderlind@na.lu.se, eller Claus Führer, 046-222 96 37, Claus.Fuhrer@na.lu.se. Web-info: http://www2.lth.se/ledjobb/larare/index.asp.
32. Matematikcentrum vid Lunds tekniska högskola utlyser en doktorandtjänst i matematik, 24 november. Info: Gunnar Sparr, 046-222 85 28, Gunnar.Sparr@math.lth.se. Web-info: http://www2.lth.se/ledjobb/dokt/index_e.asp.
33. Högskolan i Kristianstad söker en universitetslektor i matematik och matematikdidaktik, 26 november. Info: Magnus Thelaus, 044-20 34 01. Web-info: http://www.hkr.se/.
34. Naturvetenskapliga forskningsrådet (NFR) ledigkungör ett antal anställningar som forskare vid NFR inom bl.a. komplex flervariabelanalys och matematisk logik, 15 december. Info: Natalie Lunin, 08-454 42 32. Web-info: http://www.nfr.se/content/nyheter/nyheter.htm.
35. Matematiska institutionen vid Asmara University, Eritrea, (Sida-projekt) söker en staffsecondment (undervisning, delta i uppbyggandet av institutionen) för vårterminen 2000. Det finns ingen fastställd deadline för ansökningar, men besked önskas så snart som möjligt. Info: Staffan Wiktelius, staffan.wiktelius@isp.uu.se, eller staffan.wiktelius@entom.slu.se, Sten Kaijser, sten.kaijser@math.uu.se, eller Leif Abrahamsson, leif.abrahamsson@math.uu.se. Web-info: Finns ingen rörande denna tjänst, men information om projektet finns på http://www.uu.se:80/Adresser/Directory/deps/SI12.html.

Conferences, etc.

36. 13th AAECC Symposium on Applied Algebra, Algebraic Algorithms, and Error-Correcting Codes, November 14 – 19, Hawaii, USA. URL: http://www.irit.fr/ACTIVITES/AAECC/aaecc13.htm.
37. XX:ème Rencontre Franco-Belge de Statisticiens, November 25 – 26, Université Libre de Bruxelles, Brussels, Belgium. URL: http://isro.ulb.ac.be.
38. Mathematical and Computational Methods in Music, December 2 – 4, University of Vienna, Austria. URL: http://tyche.mat.univie.ac.at/~diderot/.
39. PanAmerican Workshop on Applied and Computational Mathematics, December 12 – 17, Valparaiso y Vinc del Mar, Chile. URL: http://www.sci.sdsu.edu/math_cs/PanAm98.html.
40. The 1999 Twente Conference on Lie Groups, December 20 – 22, University of Twente, the Netherlands. URL: http://www.math.utwente.nl/~lie/.
41. Workshop on Computational Algebraic Analysis, January 5 – 7, 2000, MSRI, Berkeley, USA.
42. Workshop on Computational Stochastics, January 17 – 22, 2000, University of Aarhus, Denmark. URL: http://www.maphysto.dk/events/CompStoc2000/.
43. International Conference on Differential Geometry and Quantum Physics, March 6 – 10, 2000, Berlin, Germany. URL: http://www.math.TU-Berlin.DE/~bach/FSS.html.
44. Optimization, Statistics, Mathematical Economics and Algorithms IV, March 8 – 11, 2000, Habana, Cuba.
45. Geometry and Applications, March 13 – 16, 2000, Novosibirsk, Russia.
46. International Conference on Fundamental Sciences: Mathematics and Theoretical Physics, March 13 – 17, 2000, Singapore. URL: http://www.math.nus.edu.sg/icfs.
47. Seventh Rhine Workshop on Computer Algebra, March 22 – 24, 2000, Bregenz, Austria. URL: http://www.inf.ethz.ch/rwca00/.
48. Harmonic Maps and Curvature Properties of Submanifolds 2, April 11 – 14, 2000, University of Leeds, Great Britain. URL: http://www.amsta.leeds.ac.uk/pure/geometry/leeds2000.html.
49. Fractal 2000, "Complexity and Fractals in the Sciences", April 16 – 19, 2000, Singapore. URL: http://www.kingston.ac.uk/fractal/.
50. Spring School on Analysis, April 23 – 29, 2000, Paseky nad Jizerou, Czech Republic. URL: http://www.karlin.mff.cuni.cz/katedry/kma/ss.
51. Representation Theory and Computational Algebra, May 15 – 18, 2000, University of Georgia, Athens, Georgia, USA. URL: http://www.math.uga.edu/~djb/conf2000.html.
52. Summer School on Stereology and Geometric Tomography, May 20 – 25, 2000, Sandbjerg Manor, Denmark. URL: http://www.maphysto.dk/events/S-and-GT2000/.
53. Some Recent Techniques in Harmonic Analysis, May 28 – June 3, 2000, Paseky nad Jizerou, Czech Republic. URL: http://www.karlin.mff.cuni.cz/katedry/kma/ss.

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54. SIAM Conference on Discrete Mathematics, June 12 – 15, 2000, Radisson Hotel Metrodome, Minneapolis, Minnesota, USA. URL: siam.org/meetings/dm00/.
55. First AMS-Scandinavian International Mathematics Meeting. XXIII Scandinavian Congress of Mathematicians, June 13 – 16, 2000, Odense, Denmark. URL: http://www.imada.ou.dk/~hjm/AMS.Scand.2000.html.
56. Functional Analysis Valencia 2000, July 3 – 7, 2000, Technical University of Valencia, Spain. URL: http://math-www.uni-paderborn.de/VLC2000.
57. Catop 2000, July 4 – 6, 2000, University of Fribourg, Switzerland. URL: http://www.unifr.ch/math/catop2000.
58. The Sixth Barcelona Logic Meeting (6BLM), July 6 – 8, 2000, Barcelona, Spain. URL: http://www.crm.es.
59. Third European Congress of Mathematics, July 10 – 14, 2000, Barcelona, Spain. URL: http://www.iec.es/3ecm/.
60. VI Workshop on Real and Complex Singularities, July 17 – 21, 2000, ICMC-USP, Sco Carlos, S.P. Brazil. URL: http://www.icmc.sc.usp.br/eventos.
61. I Colloquium on Lie Theory and Applications, July 17 – 22, 2000, Vigo, Spain. URL: http://www.dma.uvigo.es/~clieta/index.
62. EMS Summer School on New Analytic and Geometric Methods in Inverse Problems, July 24 – August 3, 2000, Edinburgh, Scotland.
63. EMS Summer School in Probability Theory, August 17 – September 3, 2000, Saint-Flour, Cantal, France.
64. IMACS 2000, August 21 – 25, 2000, EPFL, Lausanne, Switzerland. URL: http://imacs2000.epfl.ch.