



BRÅKET



Information om seminarier och högre undervisning i matematiska ämnen i Stockholmsområdet

NR 41

FREDAGEN DEN 12 DECEMBER 2008

BRÅKET

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

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<http://www.math.kth.se/braket/>

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Red. för Bråket

Institutionen för matematik

KTH

100 44 Stockholm

Sista manustid för nästa nummer:
Torsdagen den 8 januari kl. 13.00.

SEMINARIER

Seminarielistan finns på sidan 2.

Disputation i matematik

Fredrik Nordström skall disputerar på avhandlingen *Cofinality Properties of Categories of Chain Complexes* tisdagen den 16 december kl. 13.00 i sal F3, KTH, Lindstedtsvägen 26, b.v. Se Bråket nr 40 sidan 7.

Disputation i reglerteknik

Märta Barenthin Syberg skall disputerar vid KTH på avhandlingen *Complexity Issues, Validation and Input Design for Control in System Identification* torsdagen den 18 december kl. 13.00. Se sidan 8.

Disputation i matematik

Salla Franzén skall disputerar på avhandlingen *On Propagation of Boundary Continuity for Domains in Complex Space* fredagen den 19 december kl. 10.00 i sal 14, hus 5, Matematiska institutionen, SU, Kräftriket. Se Bråket nr 40 sidan 8.

Disputation i matematisk statistik

Mathias Lindholm skall disputerar på avhandlingen *Stochastic Epidemic Models: Different Aspects of Heterogeneity* fredagen den 19 december kl. 13.00 i sal 14, hus 5, Matematiska institutionen, SU, Kräftriket. Se Bråket nr 40 sidan 6.

Ett schema för högre kurser och seminarier

vid de matematiska institutionerna vid KTH och SU under vårterminen 2009 finns på sidorna 4–6.

Money, jobs: Se sidan 10.

Kurser

Anders Forsgren: Numerical non-linear programming. Se sidan 3.

Anders Karlsson: Topics in mathematics IV: Prime numbers. Se sidan 7.

God Jul och Gott Nytt År

önskas Bråkets läsare. Nästa nummer av Bråket utkommer fredagen den 9 januari 2009.

Seminarier

- Fr 12–12 kl. 13.15. Seminarium i teoretisk datalogi.** Dilian Gurov, Teorigruppen, KTH CSC: *Reducing behavioural properties to structural properties of programs with procedures*. Rum 1537, KTH CSC, Lindstedtsvägen 3, plan 5. Se Bråket nr 40 sidan 11.
- Fr 12–12 kl. 13.15–14.15. Graduate Student Seminar.** Christian Lundkvist, Matematik, KTH: *What is a stack?* Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 40 sidan 5.
- Fr 12–12 kl. 15.15–16.15. Matematiska kollokviet i Uppsala.** Ken Brown, Glasgow: *Small infinite non-commutative groups*. Siegbahnsalen, Ångströmlaboratoriet, Uppsala universitet. Kaffe/te serveras utanför föreläsningssalen kl. 14.55. Se Bråket nr 40 sidan 10.
- Ti 12–16 kl. 10.15. Plurikomplexa seminariet. (Observera tiden!)** Elizabeth Wolcan, Michigan: *Sparse effective Nullstellensätze via residue currents*. Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 9.
- On 12–17 kl. 10.15–11.00. Seminar in the tradition of Beurling and Carleman.** Michael Björklund, KTH: *Dagerholm series and Wiener-Hopf equations*. Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 9.
- On 12–17 kl. 11.15–12.00. Seminar in the tradition of Beurling and Carleman.** Oscar Andersson Forsman, KTH: *Beurling's Mapping Theorem*. Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 10.
- On 12–17 kl. 13.15–14.15. Seminarium i analys och dynamiska system.** Pavel Kurasov, Lund: *Inverse problems for graphs with cycles*. Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 3.
- On 12–17 kl. 15.15. Seminarium i matematisk statistik.** Hedvig Norlén, SU och Institute for Health and Consumer Protection, European Commission, DG Joint Research Centre, Ispra, Italien: *Assay automation in the context of in vitro method validation and regulatory toxicity*. Rum 306 (Cramérrummet), hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 7.
- On 12–17 kl. 17.50–19.00. Offentlig föreläsning på Kungl. Vetenskapsakademien.** Anders Björner, Johan Håstad och Torsten Ekedahl: *Primtalen — en mångtusenårig gåta*. Kungl. Vetenskapsakademien, Lilla Frescativägen 4A, Stockholm. Se Bråket nr 40 sidan 10.
- Observera: Föreläsningen om primtal inleds med utdelningen av Tobiaspriset med H.K.H. Kronprinsessan Victoria. Tobiaspriset är ett medicinskt forskningsstipendium med anknytning till benmärgstransplantationer. Platserna måste därför vara intagna senast kl. 17.50.*
- To 12–18 kl. 13.15–14.15. DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis).** Juan Rivera-Letelier, PUC, Chile: *Ergodic theory of ultrametric rational maps*. Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 9.
- Må 12–22 kl. 10.00–11.00. Presentation av examensarbete i matematik (15 högskolepoäng, påbyggnadsnivå). (Observera dagen!)** Gustav Lindqvist: *En ungs mans portföljval: deterministisk och osäker optimering av nytta under en livstid*. Handledare: Jan-Erik Björk. Sal 21, hus 5, Matematiska institutionen, SU, Kräftriket. Se sidan 6.

SEMINARIUM I ANALYS OCH DYNAMISKA SYSTEM

Pavel Kurasov:

Inverse problems for graphs with cycles

Abstract: The talk is devoted to the inverse problem for Schrödinger operators on metric graphs in the presence of a magnetic field. It is claimed that the knowledge of the corresponding Titchmarsh-Weyl (matrix) function for different values of the magnetic field may help to solve the inverse problem, *i.e.* to reconstruct the metric graph and real (electric) potential on it. This approach is fully developed for graphs with Euler characteristic zero but without loops. It is proven that this reconstruction is possible if a certain non-resonant condition is satisfied. The problem is handled using the solution to the inverse problem for the periodic Schrödinger operator investigated by Marchenko-Ostrovskii and MacKean-Trubowitz in the 1970's. We hope that our study sheds a new light on this classical theorem.

Tid och plats: Onsdagen den 17 december kl. 13.15–14.15 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

GRADUATE COURSE

Anders Forsgren:

Numerical nonlinear programming (SF3840, 7.5 credits)

This course is primarily intended for graduate students in optimization and systems theory, or other graduate students with a good background in optimization.

Summary of contents:

The course deals with algorithms and fundamental theory for nonlinear finite-dimensional optimization problems. Fundamental optimization concepts, such as convexity and duality are also introduced. The main focus is nonlinear programming, unconstrained and constrained. Areas considered are unconstrained minimization, linearly constrained minimization, and nonlinearly constrained minimization. The focus is on methods which are considered modern and efficient today.

Unconstrained nonlinear programming: optimality conditions, Newton methods, quasi-Newton methods, conjugate gradients, least-squares problems.

Constrained nonlinear programming: optimality conditions, quadratic programming, SQP methods, penalty methods, barrier methods, dual methods.

Linear programming is treated as a special case of nonlinear programming.

Semidefinite programming and linear matrix inequalities are also covered.

Prerequisites: Suitable prerequisites are the courses SF2822 Applied Nonlinear Optimization, DN2251 Applied Numerical Methods III and SF2713 Analysis, basic course, or similar knowledge.

Schedule: The first meeting will be held on Thursday, January 15, 2009, at 13.15–15.00 in seminar room 3721, Department of Mathematics, KTH, Lindstedtsvägen 25. There will tentatively be 12 lectures.

Examination: The examination is by homework assignments and a final oral examination.

Examiner: Anders Forsgren, room 3703, Department of Mathematics, KTH, Lindstedtsvägen 25. Telephone: 08-790 71 27. E-mail: andersf@kth.se.

Welcome!

Anders Forsgren

**Schema för högre kurser och seminarier vid
de matematiska institutionerna vid KTH och SU
under vårterminen 2009**

Högre kurser

Bayesian networks, 7.5 hp.

Lärare: Timo Koski.

Tid och plats: Tisdagar kl. 10.15 – 12.00 i KTH:3721. Kursstart den 13 januari.

Differentialgeometri, 7.5 hp.

Lärare: Mattias Dahl.

Tid och plats: Tisdagar kl. 10.15 – 12.00 i KTH:3733. Kursstart den 27 januari.

Detaljer: <http://www.math.kth.se/math/GRU/2008.2009/SF2722/>.

Elementär algebraisk geometri, 7.5 hp.

Lärare: Boris Shapiro.

Tid och plats: Måndagar kl. 13.15 – 15.00 i SU:306. Kursstart den 19 januari.

Detaljer: <http://www.math.su.se/pub/jsp/polopoly.jsp?d=8034&a=29861>.

Ergodteori och stokastisk kalkyl, 10 hp.

Lärare: Michael Björklund, Boualem Djehiche.

Tid och plats: Måndagar kl. 10.15 – 12.00 i KTH:3733. Kursstart den 12 januari.

Galoisteori, 7.5 hp.

Lärare: Ralf Fröberg.

Tid och plats: Torsdagar kl. 13.15 – 15.00 i SU:306. Kursstart den 22 januari.

Detaljer: <http://www.math.su.se/pub/jsp/polopoly.jsp?d=8034&a=29852>.

Graduate reading course in algebraic statistics, 7.5 hp.

Lärare: Alexander Engström, Timo Koski, Lars Svensson.

Tid och plats: Fredagar kl. 15.15 – 17.00 i KTH:3733. Kursen började den 28 november. Se Bråket nr 38 sidan 13.

Introduction to the theory of spectral sequences, 7.5 hp.

Lärare: Sergei Merkulov.

Tid och plats: Fredagar kl. 13.15 – 15.00 i SU:306. Kursstart den 23 januari.

Mathematical and computational methods from micro to macro scales, 8 hp.

Lärare: Anders Szepessy, m.fl.

Tid och plats: Tisdagar kl. 10.15 – 12.00 i KTH:4523. Kursstart den 27 januari.

Detaljer: <http://www.nada.kth.se/~szepessy/micro-macro.html>.

Numerical nonlinear programming, 7.5 hp.

Lärare: Anders Forsgren.

Tid och plats: Kursstart torsdagen den 15 januari kl. 13.15 – 15.00 i KTH:3721. Se sidan 3.

Operator theory: an easy introduction, 7.5 hp.

Lärare: Håkan Hedenmalm.

Tid och plats: Tisdagar kl. 15.15 – 17.00 i KTH:3733. Kursstart den 27 januari.

Optimal control, 7.5 hp.

Lärare: Ulf Jönsson.

Tid och plats: Kursstart onsdagen den 14 januari kl. 10.15 i sal D34, KTH, Lindstedtsvägen 5, b.v.

Detaljer:

<http://www.math.kth.se/optysyst/grundutbildning/kurser/SF2852/KursPMOptStyr.html>.

(Fortsättning på nästa sida.)

Spectral theory and its applications, 7.5 hp.*Lärare:* Ari Laptev.*Tid och plats:* Fredagar kl. 9.15 – 12.00 i KTH:3733. Kursstart den 16 januari.**Topologi**, 7.5 hp.*Lärare:* Björn Gustafsson.*Tid och plats:* Tisdagar kl. 13.15 – 15.00 i KTH:3733. Kursstart den 27 januari.*Detaljer:* <http://www.math.kth.se/math/GRU/2008.2009/SF2721/>.**Valda ämnen i matematik IV: Primaltal**, 7.5 hp.*Lärare:* Anders Karlsson.*Tid och plats:* Torsdagar kl. 10.15 – 12.00 i KTH:3733. Kursstart den 22 januari. Se sidan 7.*Detaljer:* <http://www.math.kth.se/math/GRU/2008.2009/SF2724/>.**Valda ämnen i matematik V: Cliffordalgebror, geometrisk algebra och tillämpningar**, 7.5 hp.*Lärare:* Douglas Lundholm, Lars Svensson.*Tid och plats:* Torsdagar kl. 15.15 – 17.00 i KTH:3721. Kursstart den 29 januari.*Detaljer:* <http://www.math.kth.se/~dogge/clifford/>.**Youngtablåer**, 7.5 hp.*Lärare:* Rikard Bøgvad.*Tid och plats:* Onsdagar kl. 10.15 – 12.00 i SU:306. Kursstart den 4 februari. Tiden kan komma att ändras efter diskussion med kursdeltagarna.**Fördjupning i finansmatematik, fdk**, 7.5 hp.*Lärare:* Thomas Höglund, Joanna Tyrcha.*Tid och plats:* Tisdagar och fredagar (januari – mars) kl. 9.15 – 12.00 i SU:14. Kursstart den 20 januari.*Detaljer:* <http://www2.math.su.se/matstat/und/>.**Analys av kategoridata, pk**, 7.5 hp.*Lärare:* Juni Palmgren, Jan-Olov Persson.*Tid och plats:* Blandade dagar under mars – maj. Kursstart måndagen den 23 mars i SU:32 (tid har ej meddelats).*Detaljer:* <http://www2.math.su.se/matstat/und/>.**Statistiska modeller, fdk**, 7.5 hp.*Lärare:* Rolf Sundberg.*Tid och plats:* Tisdagar och fredagar (mars – maj) kl. 9.15 – 12.00 i SU:32. Kursstart den 24 mars.*Detaljer:* <http://www2.math.su.se/matstat/und/>.**Seminarier****Kollokvier.***Seminarieledare:* Karlsson, Shapiro.*Tid och plats:* Onsdagar kl. 16.00 – 17.00 i SU:14 (veckor med jämna nummer) resp. KTH:3721 (veckor med udda nummer).**Algebra- och geometriseminarier.***Seminarieledare:* Di Rocco, Ekedahl, Faber, Fröberg, Merkulov, Roos, Skjelnes.*Tid och plats:* Onsdagar kl. 13.15 – 15.00 i SU:306 (veckor med jämna nummer) resp. KTH:3733 (veckor med udda nummer).

(Fortsättning på nästa sida.)

DNA-seminariet Uppsala-KTH (Dynamical systems, Number theory, Analysis).*Seminarieledare:* Karlsson, Kurlberg, Strömbergsson.*Tid och plats:* Seminariet alternerar mellan KTH (torsdagar kl. 13.15–15.00 i KTH:3721) och Uppsala.**Kombinatorikseminarier.***Seminarieledare:* Björner, Hultman, Linusson.*Tid och plats:* Onsdagar kl. 10.15–12.00 i KTH:3733.**Logikseminarier.***Seminarieledare:* Martin-Löf, Palmgren, Stoltenberg-Hansen.*Tid och plats:* Seminariet alternerar mellan SU (onsdagar kl. 10.00–11.45 i SU:16) och Uppsala.**Plurikomplexa seminariet.***Seminarieledare:* Filipsson, Jöricke, Kiselman, Passare.*Tid och plats:* Tisdagar kl. 10.15–12.00 i SU:306.**Seminarier i analys och dynamiska system.***Seminarieledare:* Benedicks, Boman, Carleson, Hedenmalm, Laptev.*Tid och plats:* Onsdagar kl. 13.15–14.15 i KTH:3721.**Seminarier i matematisk statistik och finansiell matematik.***Seminarieledare:* Djehiche, Koski.*Tid och plats:* Måndagar kl. 15.15–17.00 i KTH:3733.**Seminarier i optimeringslära och systemteori.***Seminarieledare:* Lindquist, Enqvist, Forsgren, Hu, Jönsson, Svanberg.*Tid och plats:* Fredagar kl. 11.00–12.00 i KTH:3721.**Adresser:** KTH:3721: Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

KTH:3733: Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

KTH:4523: Seminarierum 4523, KTH CSC, Lindstedtsvägen 5, plan 5.

SU:14: Sal 14, hus 5, Matematiska institutionen, SU, Kräftriket.

SU:16: Sal 16, hus 5, Matematiska institutionen, SU, Kräftriket.

SU:32: Sal 32, hus 5, Matematiska institutionen, SU, Kräftriket.

SU:306: Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

PRESENTATION AV EXAMENSARBETE I MATEMATIK**Gustav Lindqvist:****En ung mans portföljval: deterministisk
och osäker optimering av nytta under en livstid***Handledare:* **Jan-Erik Björk.***Sammanfattning:* Syftet med detta examensarbete är att visa hur en ung man kan göra ett optimalt portföljval då det råder osäkerhet kring avkastningen på det finansiella instrumentet. Problemet löses genom dynamisk optimering. Vidare kommer examensarbetet att med hjälp av numeriska lösningar ytterligare bidra till förståelsen av lösningen av problemet.*Tid och plats:* Måndagen den 22 december kl. 10.00–11.00 i sal 21, hus 5, Matematiska institutionen, SU, Kräftriket.

SEMINARIUM I MATEMATISK STATISTIK

Hedvig Norlén:

Assay automation in the context of in vitro method validation and regulatory toxicity

Abstract: The new REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) Directive on chemicals and the recent Amendment to the Cosmetics Directive have created a significant regulatory demand for validated in vitro methods. These methods should provide reliable data to support hazard and exposure assessment studies that help to predict the adverse effects that substances may have on our health.

Within the Institute of Health and Consumer Protection (IHCP) of the Joint Research Centre (JRC) significant effort is being focused on the assessment of candidate assays and their validation as approved alternatives to animal testing. The IHCP has established an automated in vitro testing facility comprising two robotic platforms designed primarily for cell-based toxicity studies. Linked to the robotic facility a comprehensive data and workflow management system has been installed. This solution deals with the whole data process from experimental design to result analysis, and it ensures complete traceability of all test results.

In this talk, we will discuss some aspects related to the automation of a particular in vitro assay. This includes a detailed description of the experimental design, the dose response generation, and the prediction models used to propose starting doses for in vivo experiments.

Tid och plats: Onsdagen den 17 december kl. 15.15 i rum 306 (Cramérrummet), hus 6, Matematiska institutionen, SU, Kräftriket.

FÖRDJUPNINGSKURS I MATEMATIK

Anders Karlsson:

Topics in mathematics IV: Prime numbers (SF2724)

This course will cover some classic results related to prime numbers and discuss some well-known unsolved problems. More precise content includes: The fundamental theorem of arithmetic. Euclid's and Euler's proof of the infinitude of primes. Theta inversion. The Riemann zeta function, including the Euler product, functional equation and special values. The prime number theorem. The Riemann hypothesis. Quadratic reciprocity. RSA cryptography. Goldbach's conjecture. The ABC-conjecture, with an analogue for polynomials and the relation to Fermat's last theorem. Theorems of Dirichlet and Green-Tao concerning primes and arithmetic progressions.

The hope is that during this walk through landmark theorems and conjectures on primes, we will get a glimpse of the beauty and unity of mathematics, in particular through the use of analytic methods for the solution of problems apparently "discrete" at first sight.

Although the course is primarily intended for advanced undergraduates, anyone interested is welcome to attend.

Prerequisites: Calculus and some complex analysis.

Time and place: Thursdays at 10.15–12.00 in seminar room 3733, Department of Mathematics, KTH, Lindstedtsvägen 25, floor 7. The course will start on January 22, 2009.

Welcome!
Anders Karlsson

DISPUTATION I REGLERTEKNIK**Märta Barenthin Syberg**

skall disputeras på avhandlingen

**Complexity Issues, Validation and Input Design
for Control in System Identification**torsdagen den 18 december 2008 kl. 13.00 i sal F3, KTH, Lindstedtsvägen 26, b.v. Till opponent har utsetts *professor Lennart Ljung*, Linköpings universitet.***Abstract of the thesis***

System identification is about constructing and validating models from measured data. When designing system identification experiments in control applications, there are many aspects to consider. One important aspect is the choice of model structure. Another crucial issue is the design of input signals. Once a model of the system has been estimated, it is essential to validate the closed loop performance if the feedback controller is based on this model. In this thesis we consider the prediction-error identification method. We study model structure complexity issues, input design and model validation for control.

To describe real-life systems with high accuracy, models of very high complexity are typically needed. However, the variance of the model estimate usually increases with the model order. In this thesis we investigate why system identification, despite this rather pessimistic observation, is successfully applied in the industrial practice as a reliable modeling tool. It is shown that by designing suitable input signals for the identification experiment, we obtain accurate estimates of the frequency function also for very complex systems. The input power spectrum can be used to shape the model quality. A key tool in input design is to introduce a linear parametrization of the spectrum. With this parametrization, several optimal input design problems can be rewritten as convex optimization problems.

Another problem considered is to design controllers with guaranteed robust stability and prescribed robust performance using models identified from experimental data. These models are uncertain due to process noise, measurement noise and unmodelled dynamics. In this thesis we only consider errors due to measurement noise. The model uncertainty is represented by ellipsoidal confidence regions in the model parameter space. We develop tools to cope with these ellipsoids for scalar and multivariable models. These tools are used for designing robust controllers, for validating the closed loop performance and for improving the model with input design. Therefore this thesis is part of the research effort to connect prediction-error identification methods and robust control theory.

The stability of the closed loop system can be validated using the small gain theorem. A critical issue is thus to have an accurate estimate of the \mathcal{L}_2 -gain of the system. The key to solve this problem is to find the input signal that maximizes the gain. One approach is to use a model of the system to design the input signal. An alternative approach is to let the system itself determine a suitable input sequence in repeated experiments. In such an approach no model of the system is required. Procedures for gain estimation of linear and nonlinear systems are discussed and compared.

PLURIKOMPLEXA SEMINARIET

Elizabeth Wolcan:

Sparse effective Nullstellensätze via residue currents

Abstract: Residue currents are generalizations of one complex variable residues and can be thought of as currents representing ideals of holomorphic functions or polynomials.

I will discuss how residue currents on toric varieties can be used to obtain certain effective versions of Hilbert's Nullstellensatz; this is work in progress.

Tid och plats: Tisdagen den 16 december kl. 10.15 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

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

Juan Rivera-Letelier:

Ergodic theory of ultrametric rational maps

Abstract: One of the fundamental results in complex dynamics is the existence and uniqueness of the measure of maximal entropy. This measure has several interesting properties: it has exponential decay of correlations and satisfies the central limit theorem for Hölder continuous observables, and furthermore it describes the asymptotic distribution of periodic points and of iterated preimages. In the arithmetic case it also describes the asymptotic distribution of points of small height.

In the case of rational maps defined over an ultrametric field there is a measure with similar equidistribution properties. However, some relatively simple examples show that this measure is not of maximal entropy, and that the topological entropy is not equal to the logarithm of the degree of the rational map. There are, however, some estimates that allow us to characterize those rational maps with zero topological entropy.

The purpose of this talk is to describe the construction of this measure and to show some of its fundamental properties. We will also see some key examples and open problems.

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

**SEMINARS IN THE TRADITION
OF BEURLING AND CARLEMAN**

Michael Björklund:

Dagerholm series and Wiener-Hopf equations

Abstract: At the international congress in Zürich 1932, T. Carleman announced necessary and sufficient conditions on a linear system in infinitely many variables to have at least one solution with certain decay properties. One of the hardest problems left open was the case of the discrete Hilbert transform. We will discuss K. Dagerholm's elegant solution to this problem.

Tid och plats: Onsdagen den 17 december kl. 10.15–11.00 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

(Fortsättning på nästa sida.)

**Oscar Andersson Forsman:
Beurling's Mapping Theorem**

Abstract: In his 1953 paper, A. Beurling proves an extension of the Riemann Mapping Theorem where the Riemann map is forced to a functional equation on the boundary. We discuss necessary and sufficient conditions for existence and uniqueness in this situation.

Tid och plats: Onsdagen den 17 december kl. 11.15–12.00 i rum 306, hus 6, 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 2008. 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.
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. Lunds Tekniska Högskola söker minst två doktorander i matematik med inriktning mot bildanalys och datorseende. Sista ansökningsdag är den 19 januari 2009. Web-info: <http://www3.lu.se/info/lediga/admin/document/PA2008-4091.pdf>.
12. Matematiska institutionen vid SU utlyser en postdoktorsanställning (ett år med möjlighet till ett års förlängning) i matematisk statistik med inriktning mot stokastiska modeller för sociala nätverk. Sista ansökningsdag är den 15 januari 2009. Web-info: <http://www.math.su.se/pub/jsp/polopoly.jsp?d=5982&a=28839>. Klicka sedan på "Läs hela utlysningen här".

Old information

Se punkterna 11–17 på sidan 12 i Bråket nr 40.