



BRÅKET



*Information om seminarier och högre undervisning
i matematiska ämnen i Stockholmsområdet*

NR 33

FREDAGEN DEN 12 OKTOBER 2001

BRÅKET

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

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KTH
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Sista manustid för nästa nummer:
Torsdagen den 18 oktober
kl. 13.00.

Rolf Schock Prizes 2001

Professor emeritus Saul A. Kripke har fått priset i logik och filosofi. Professor Elliott H. Lieb har fått priset i matematik. I samband med priserna äger ett symposium rum tisdagen den 23 oktober och ges föreläsningar onsdagen den 24 oktober på Kungl. Vetenskapsakademien. Se sidan 7.

SEMINARIER

Fr 10–12 kl. 15.15. Populära kollokviet. Peter Jones, Yale University och Institut Mittag-Leffler: *Multi-scale analysis, the travelling salesman, and geometry of measures*. Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 32 sidan 4.

Må 10–15 kl. 13.15–14.15. Potential Analysis Seminar. Anders Szepessy: *When is adaptive approximation good?* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 4.

Må 10–15 kl. 13.15–15.00. Algebraseminarium — licentiatseminarium i matematik. Jesper Carlström presenterar sin licentiatavhandling: *Wheels — On Division by Zero*. Diskutant: Karl Meinke, Nada, KTH. Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 4.

Må 10–15 kl. 15.15–16.00. Seminarium i finansiell matematik. Michael Hemph presenterar sitt examensarbete: *Bond Trading Strategies Based on Term Structure Models*. Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 32 sidan 4.

Må 10–15 kl. 16.15–17.00. Seminarium i finansiell matematik. Nikolas Santikos presenterar sitt examensarbete: *Pricing Spread options on Swaps*. Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se Bråket nr 32 sidan 6.

Ti 10–16 kl. 10.15. Plurikomplexa seminariet. Robert Berman, Göteborg: *From the Yamabe problem on a Riemann surface to Seiberg-Witten invariants*. Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 3.

Fortsättning på nästa sida.

Seminarier (fortsättning)

- Ti 10–16 kl. 11.00–12.00. Optimization and Systems Theory Seminar.** (*Observera dagen!*) Natalia Balashevich, Department of Control Processes Theory, Institute of Mathematics, National Academy of Sciences of Belarus, Minsk: *Real-time optimization of control systems*. Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 5.
- Ti 10–16 kl. 13.15–15.00. Seminarium anordnat av Centrum för säkerhetsforskning, KTH. Professor Åke Svensson,** Matematisk statistik, SU, och epidemiologiska enheten, Smittskyddsinstitutet: *Sensitivitet, specifitet och positivt prediktionsvärde*. Sal V2, KTH, Teknikringen 76, 2 tr. Se sidan 6.
- Ti 10–16 kl. 14.00. Plurikomplexa seminariet. Mikael Passare,** SU: *Complex convexity — recent results of Kiselman and Hörmander*. Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 4.
- Ti 10–16 kl. 14.30–15.30. Mittag-Leffler Seminar. Lukas Geyer,** Dortmund: *Linearization, Siegel disks, and Brjuno numbers*. Institut Mittag-Leffler, Auravägen 17, Djursholm.
- Ti 10–16 kl. 16.00–17.00. Mittag-Leffler Seminar. Peter Jones,** New Haven: *An introduction to harmonic measure and scaling: Part I*. Institut Mittag-Leffler, Auravägen 17, Djursholm.
- On 10–17 kl. 10.15–12.00. Kombinatorikseminarium. Faina I. Solov’eva,** Novosibirsk: *On components of perfect binary codes*. Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 6.
- On 10–17 kl. 13.15–14.15. Seminarium i analys och dynamiska system. Krzysztof Burdzy,** University of Washington, Seattle, och Institut Mittag-Leffler: *The heat equation and reflected Brownian motion in domains with moving boundaries*. Seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 8.
- On 10–17 kl. 15.15. Seminarium i matematisk statistik. Rolf Sundberg,** SU: *Statistics in chemistry — chemometrics*. Rum 306, Cramérrummet, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 8.
- On 10–17 kl. 15.15–17.00. Seminarium om beslutsstöd och informationsfusion i ledningssystem.** (*Observera dagen!*) Dr Alexander E. R. Woodcock: *Mathematical models of combat*. Sal E2, KTH, Lindstedtsvägen 3, b.v. Se sidan 5.
- To 10–18 kl. 14.00–15.00. Mittag-Leffler Seminar. Harry Kesten,** Ithaca: *An introduction to percolation: Part II*. Institut Mittag-Leffler, Auravägen 17, Djursholm.
- To 10–18 kl. 15.30–16.30. Mittag-Leffler Seminar. Speaker to be announced: Title to be announced.** Institut Mittag-Leffler, Auravägen 17, Djursholm.
- To 10–18 kl. 16.15–18.00. Seminarium i matematik och fysik vid Mälardalens högskola (Eskilstuna). PRIM-gruppen,** Lärarhögskolan i Stockholm: *Analys och bedömning av elevers kunskaper i matematik*. Lektionssal A309, Mälardalens högskola, Eskilstuna.
- Må 10–22 kl. 11.15. Seminarium. Enrico Bombieri,** IAS, Princeton: *Title to be announced (a topic in intersection theory)*. Seminariet äger rum på KTH. Lokal meddelas i nästa nummer av Bråket.

Fortsättning på nästa sida.

Seminarier (fortsättning)

- Må 10–22 kl. 13.15–14.15. Potential Analysis Seminar.** Nina Uraltseva: *Contact between free and fix boundary in a parabolic variational inequality.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.
- Må 10–22 kl. 13.15–15.00. Algebra and Geometry Seminar.** Valentina Barucci, Università di Roma 1: *On an equivalence relation between algebroid curves.* Rum 306, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 6.
- Må 10–22 kl. 15.15–17.00. Seminarium i matematisk statistik.** Torkel Erhardsson: *Strong memoryless times and rare events in stationary Markov renewal processes.* Seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7. Se sidan 9.
- Ti 10–23 kl. 15.15–17.00. Seminarium om beslutsstöd och informationsfusion i ledningssystem.** Mats Persson, Försvarshögskolan, och Klas Wallenius, Nada, KTH, och SaabTech Systems AB: *Enskild och gemensam situationsuppfattning.* Sal E32, KTH, Lindstedtsvägen 3, b.v. Se sidan 8.
- On 10–24 kl. 15.15. Seminarium i matematisk statistik.** Nader Tajvidi, Lunds tekniska högskola: *Parametric and nonparametric analysis of temporal trend in extreme values with applications to wind storm losses and temperature data.* Rum 306, Cramérummet, hus 6, Matematiska institutionen, SU, Kräftriket. Se sidan 9.
- On 10–24 kl. 15.15–16.00. Seminarium i matematik och fysik vid Mälardalens högskola (Västerås).** Christos Papahristodoulou, Mälardalens högskola: *Optimal portfolios.* Lektionssal N24, Mälardalens högskola, Västerås.

PLURIKOMPLEXA SEMINARIET**Robert Berman: From the Yamabe problem
on a Riemann surface to Seiberg-Witten invariants**

Abstract: The classical Yamabe problem, on a Riemann surface, concerns the problem of conformally deforming a given metric to one of constant curvature. To be concrete, one could try to deform an egg to a sphere. Analytically, the problem amounts to solving a certain quasi-linear PDE. I will show how a naïve attempt to use the classical continuity method in PDE-theory fails, and we are led to a “change of variables”. In this way we obtain a reformulation of the problem in terms of holomorphic geometry. Namely, the problem of deforming the standard $\bar{\partial}$ -operator to a “special” one. Now the continuity method can be successfully applied.

In fact, the new equations turn out to be the Seiberg-Witten equations over a Riemann surface. In 1994 these equations, coming from physics, revolutionized (real) four-dimensional differential topology, and they have also been successfully applied to certain problems in complex analysis. Relating the Seiberg-Witten equations in the simpler setting of two (real) dimensions to the classical Yamabe problem provides a certain intuition for the four-dimensional situation, since many features are shared. Also it leads to, yet another, solution of the Yamabe problem (in this special case: we will only consider the negative curvature case on a Riemann surface).

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

POTENTIAL ANALYSIS SEMINAR

Anders Szepessy:

When is adaptive approximation good?

Abstract: In the 1960's Bakhvalov and Smolyak proved that, using a fixed number of function evaluations to approximate a given linear functional, there is a non-adaptive (linear) approximation which has as small maximal error as any adaptive (non-linear) method, with functions in a convex symmetric subset of a function space. Starting from Bakhvalov's and Smolyak's result, I will discuss adaptive approximation and give ODE, SDE and PDE examples where adaptive methods indeed are better.

Tid och plats: Måndagen den 15 oktober kl. 13.15–14.15 i seminarierum 3733, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

**ALGEBRASEMINARIUM —
LICENTIATSEMINARIUM I MATEMATIK**

Jesper Carlström

presenterar sin licentiatavhandling:

Wheels — On Division by Zero

Diskutant: **Karl Meinke**, Nada, KTH.

Abstract: We show how to extend any commutative ring (or semiring) so that division by any element, including 0, is in a sense possible. The resulting structure is what is called a *wheel*. Wheels are similar to rings, but $0x = 0$ does not hold in general; the subset $\{x \mid 0x = 0\}$ of any wheel is a commutative ring (or semiring), and any commutative ring (or semiring) with identity can be described as such a subset of a wheel.

The main goal of the thesis is to show that the given axioms for wheels are natural and to clarify how valid identities for wheels relate to valid identities for commutative rings and semirings.

Avhandlingen finns elektroniskt publicerad på <http://www.matematik.su.se/reports/2001/11/>.

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

PLURIKOMPLEXA SEMINARIET

**Mikael Passare: Complex convexity —
recent results of Kiselman and Hörmander**

Abstract: A domain $\Omega \subset \mathbb{C}^n$ is said to be \mathbb{C} -convex if its intersection with an arbitrary complex line is contractible. For Ω with a smooth boundary this is equivalent to the condition that none of the complex hyperplanes that are tangent to $\partial\Omega$ should intersect Ω . In a paper from 1998 Christer Kiselman gave a differential characterization of \mathbb{C} -convexity for smooth domains: The real Hessian of a defining function should be positive semidefinite in the complex tangent space at every boundary point. We shall discuss a very recent manuscript by Lars Hörmander containing shorter proofs and some extensions of Kiselman's theorem.

Tid och plats: Tisdagen den 16 oktober kl. 14.00 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

OPTIMIZATION AND SYSTEMS THEORY SEMINAR**Natalia Balashevich:****Real-time optimization of control systems**

Abstract: A problem of real-time optimization of a control system with nonlinear dynamics, subject to control and endpoint state constraints, is considered. At first, an algorithm of constructing an open-loop solution is described. This algorithm consists of two procedures.

The first procedure includes a piecewise linear approximation of a nonlinear element of the system. Although after such an approximation the optimal control problem remains nonlinear, it allows to develop an effective method based on fast algorithms of optimization of linear control systems. The second procedure of the algorithm consists in asymptotic correction of the solution obtained by the first procedure. The suggested method of correction is based on asymptotic expansions of switching points of control and accompanying elements. This is the main difference of the method from known asymptotic methods which are based on asymptotic expansions of primal and dual variables.

The idea of closed-loop solution to the problem is based on constructing a realization of optimal feedback in any concrete control process under unknown but bounded disturbances. The realization of the algorithm of open-loop solution is oriented on fast corrections of optimal open-loop control, subject to small variations of the initial state. This is possible due to storage a small amount of additional information, allowing to avoid the complete integration of the primal or adjoint system. Such a realization is a basis of an algorithm of operating an asymptotically optimal controller which generates signals of optimal feedback in actual control processes in real time.

An application of this approach to constructive solution of nonextremal control problems is discussed.

This talk is based on joint work with Professors Rafail Gabasov, Faina Kirillova, and Anatolii Kalinin.

Tid och plats: Tisdagen den 16 oktober kl. 11.00 – 12.00 i seminarierum 3721, Institutionen för matematik, KTH, Lindstedtsvägen 25, plan 7.

**SEMINARIUM OM BESLUTSSTÖD
OCH INFORMATIONSFUSION I LEDNINGSSYSTEM****Alexander E. R. Woodcock:
Mathematical models of combat**

Alexander E. R. Woodcock, Ph.D., was among the first published authors in the field of catastrophe theory, and over the past decade he has become increasingly involved in the study of combat with embedded command and control. After a formal education in the U.K., Dr. Woodcock became a physiologist, but it was through research and self-education that he entered the fields of experimental mathematics and political science. Combined with his many interests and vocations, Dr. Woodcock is Chief Scientist for BAE Systems, which provides specialized analytical services both to government and the private sector.

Tid och plats: Onsdagen den 17 oktober kl. 15.15 – 17.00 i sal E2, KTH, Lindstedtsvägen 3, b.v.

För mer information, se http://www.nada.kth.se/theory/decision_support_seminars/program_autumn_01.html.

**SEMINARIUM ANORDNAT AV
CENTRUM FÖR SÄKERHETSFORSKNING, KTH**

Åke Svensson:

Sensitivitet, specifitet och positivt prediktionsvärde

Sammanfattning: Seminariet kommer att diskutera de problem som uppstår när vi utför test på enskilda individer för att studera förekomsten av ett visst fenomen (t.ex. en sjukdom) i en stor population. Exempel är HIV-test eller test av kor för BSE.

Tid och plats: Tisdagen den 16 oktober kl. 13.15–15.00 i sal V2, KTH, Teknikringen 76, 2 tr.

KOMBINATORIKSEMINARIUM

Faina I. Solov'eva:

On components of perfect binary codes

Abstract: Special components of perfect binary codes are investigated. We call such components i -components. A class of perfect codes of length $n > 7$ with indecomposable non-extremal cardinality i -components is constructed. The existence of maximal cardinality non-isomorphic indecomposable i -components of different perfect codes of length $n > 7$ is proved.

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

ALGEBRA AND GEOMETRY SEMINAR

Valentina Barucci:

On an equivalence relation between algebroid curves

Abstract: Given an algebroid branch R (i.e. a one-dimensional domain of the form $k[[x_1, \dots, x_n]]/P$), the sequence of overrings of R , $R = R_0 \subseteq R_1 \subseteq R_2 \subseteq \dots$, where R_{i+1} is obtained by blowing up the maximal ideal of R_i , describes the desingularization of the branch and stabilizes at the integral closure of R , that is a DVR. The multiplicity sequence of R is defined as the sequence of multiplicities $\{e_i = e(R_i)\}_{i \geq 0}$, where $e(R_i)$ is the multiplicity of the local ring R_i . So $e_j = 1$ for $j \gg 0$.

According to Zariski two algebroid branches are equivalent if they have the same multiplicity sequence. It is known that two branches are equivalent if and only if their Arf closures have the same value semigroup or, equivalently, if they have the same Arf characters (the definitions will be given in the talk). So the classes of equivalence of algebroid branches have a nice description in terms of natural numbers.

This equivalence definition can be generalized to algebroid curves (i.e. one-dimensional reduced rings of the form $k[[x_1, \dots, x_n]]/P_1 \cap \dots \cap P_d$). This more general definition extends the previous one and is coherent with the classical definition of equivalence between plane algebroid curves. Also in this case an equivalence class can be described in a purely combinatorial way, in terms of a *multiplicity tree*. In the talk some results and open problems about this combinatorial object will also be given.

Tid och plats: Måndagen den 22 oktober kl. 13.15–15.00 i rum 306, hus 6, Matematiska institutionen, SU, Kräftriket.

Rolf Schock Prizes 2001

The Royal Swedish Academy of Sciences has decided to award the Rolf Schock Prize in Logic and Philosophy 2001 to *Saul A. Kripke*, Professor Emeritus at Princeton University, USA, *for his creation of the modal-logical semantics that bear his name and for his associated original and profound investigations of identity, reference and necessity.*

The Royal Swedish Academy of Sciences has decided to award the Rolf Schock Prize in Mathematics 2001 to *Elliott H. Lieb*, Professor at Princeton University, USA, *for his outstanding work in mathematical physics, particularly for his contribution to the mathematical understanding of the quantum-mechanical many-body theory and for his work on exact solutions of models in statistical mechanics and quantum mechanics.*

Prize awarding ceremony

On Thursday, October 25, at 17.30, Princess Christina, Mrs Magnuson, will present the Rolf Schock Prizes to Professor Emeritus Saul A. Kripke and Professor Elliott H. Lieb.

Place: The Great Hall, the Royal Swedish Academy of Music (Kungl. Musikaliska akademien), Blasieholmstorg 8, Stockholm.

Rolf Schock Prize in Logic and Philosophy 2001

On Tuesday, October 23, at 15.00–17.00, there will be a symposium in connection with the philosophy of Saul A. Kripke, Laureate of the Rolf Schock Prize in Logic and Philosophy 2001. Professors Dagfinn Føllesdal, Sten Lindström, and Wlodek Rabinowicz will participate.

On Wednesday, October 24, at 15.00–17.00, there will be a public lecture by Saul A. Kripke.

Both the symposium and the lecture will take place in the Beijer Hall, the Royal Swedish Academy of Sciences (Kungl. Vetenskapsakademien), Lilla Frescativägen 4, Stockholm.

For registration and information, please contact Kerstin Gunnarson, telephone 08-673 95 05, e-mail kerstin@kva.se.

Rolf Schock Prize in Mathematics 2001

Lectures

The lectures will take place on Wednesday, October 24, 2001, in the Linné Hall, the Royal Swedish Academy of Sciences (Kungl. Vetenskapsakademien), Lilla Frescativägen 4, Stockholm. For registration and information, please contact Kerstin Gunnarson, telephone 08-673 95 05, e-mail kerstin@kva.se.

Programme

- 13.00 **Elliott H. Lieb:** *The stability of matter and quantum electrodynamics.*
- 14.00 **Jakob Yngvason:** *A fresh look at entropy and the second law of classical thermodynamics.*
- 15.15 **Jan Philip Solovej:** *The role of Thomas-Fermi theory in mathematical physics.*
- 16.05 **Ari Laptev:** *Lieb-Thirring inequalities and their applications in mathematical physics.*

SEMINARIUM I ANALYS OCH DYNAMISKA SYSTEM

Krzysztof Burdzy: The heat equation and reflected Brownian motion in domains with moving boundaries

Abstract: The title is self-explanatory. I will focus on singularities of the heat equation solution in domains with non-smooth moving boundaries. If time permits, I will also discuss some monotonicity properties of the heat equation solution. I will focus on applications of probabilistic techniques (reflected Brownian motion) to the analytic problem described in the title. The talk will be non-technical and so it will be accessible to graduate students. I will report on the joint work with Zhenqing Chen and John Sylvester, and perhaps on some results obtained jointly with David Nualart.

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

SEMINARIUM I MATEMATISK STATISTIK

Rolf Sundberg: Statistics in chemistry — chemometrics

Abstract: What is chemometrics? I will provide a historical perspective of chemometrics and some other -metrics, starting already in the 19th century, talking in particular about the interplay between statistics and problems from chemistry. A person named W. S. Gosset will be given by me a more important role than he perhaps would have admitted.

I will also talk about the character of the statistical problems of modern chemometrics, why statisticians should study them and why both statistics and chemometrics will benefit from it, and some statistically challenging areas. In particular I certainly cannot avoid discussing the (in-)famous PLS, as one important theme or example. Another question to be discussed is the role of chemometrics outside applications in chemistry.

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

SEMINARIUM OM BESLUTSSTÖD OCH INFORMATIONSFUSION I LEDNINGSSYSTEM

Mats Persson och Klas Wallenius: Enskild och gemensam situationsuppfattning

Mats Persson kommer att tala om begreppet situationsuppfattning ur användarens perspektiv. Vad innebär begreppet situationsuppfattning? Vad innebär det att situationsuppfattningen skall vara gemensam? Hur utformas överföringen från det tekniska systemet till människan, d.v.s. hur behöver MMI:er vara utformade för att en god situationsuppfattning skall uppnås? Går det att mäta situationsuppfattning?

Klas Wallenius kommer att tala om begreppet situationsuppfattning ur ett tekniskt perspektiv. WASP — The Wide Area Situation Picture är ett exempel på ett tekniskt system för att maximera både enskild och gemensam lägesuppfattning.

Tid och plats: Tisdagen den 23 oktober kl. 15.15–17.00 i sal E32, KTH, Lindstedtsvägen 3, b.v.

För mer information, se http://www.nada.kth.se/theory/decision_support_seminars/program_autumn_01.html.

SEMINARIUM I MATEMATISK STATISTIK

**Torkel Erhardsson: Strong memoryless times
and rare events in stationary Markov renewal processes**

Abstract: In an earlier talk (see Bråket 2000 no. 34, page 5), I gave a bound for the total variation distance between the distribution of the accumulated reward of a stationary renewal-reward process in discrete or continuous time, and a compound Poisson distribution. The bound can be applied to the amount of time spent by a stationary finite-state Markov process in a “rare” subset S_1 of the state space, since this amount can be expressed as an accumulated reward. In this case, the bound is easy to calculate explicitly, and is of order close to $\mu(S_1)$ (where μ is the stationary distribution), provided that the state space contains at least one frequently visited state.

In this talk, I will show how an efficient bound can be derived when the latter condition does not hold. The main idea is to embed the Markov process into a Markov renewal process on an enlarged state space, such that the condition does hold, using auxiliary random variables called strong memoryless times. If the Markov process is time-reversible, and S_1 is a single state, the resulting bound is of the same order as a certain eigenvalue ratio.

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

SEMINARIUM I MATEMATISK STATISTIK

**Nader Tajvidi: Parametric and nonparametric analysis
of temporal trend in extreme values with applications
to wind storm losses and temperature data**

Abstract: A topic of major current interest in extreme-value analysis is the investigation of temporal trends. For example, the potential influence of ‘greenhouse’ effects may result in severe storms becoming gradually more frequent, or in maximum temperatures gradually increasing, with time. One approach to evaluating these possibilities is to fit, to data, a parametric model for temporal parameter variation, as well as a model describing the marginal distribution of data at any given point in time. In this talk we discuss some parametric trend models and illustrate the methods by application to a dataset on windstorm losses in south of Sweden. We shall also discuss difficulties which might arise in formulating structural trend-models. Motivated by datasets on windstorm severity and maximum temperature, we suggest a nonparametric approach to estimating temporal trends when fitting parametric models to extreme values from a weakly-dependent time series. We illustrate the method through applications to time series where the marginal distributions are approximately Pareto, generalized-Pareto, extreme-value or Gaussian. We introduce time-varying probability plots to assess goodness of fit, we discuss local-likelihood approaches to fitting the marginal model within a window, and we propose temporal cross-validation for selecting window width. In cases where both location and scale are estimated together, the Gaussian distribution is shown to have special features that permit it to play a universal role as a ‘nominal’ model for the marginal distribution.

Tid och plats: Onsdagen den 24 oktober kl. 15.15 i rum 306, Cramérrummet, hus 6, Matematiska institutionen, SU, Kräftriket.