

Meetings And Announcements Of The Danish Mathematical Society

Program

Dansk Matematisk Forenings forårsmøde

Institut for Matematiske Fag, Aarhus Universitet

Bygning 530, Ny Munkegade, 8000 Århus C.

Torsdag den 27. maj 1999 i auditorium D1:

14.00 — Velkomst v. Bodil Branner

14.15

14.15 — Foredrag v. Alexei Venkov (Aarhus Universitet):

15.00

Phillips-Sarnak's conjecture for Hecke congruence groups with primitive characters

This is a survey talk based on the papers of R. Phillips and P. Sarnak and the recent joint work of E. Balslev and the speaker about the disappearance of embedded eigenvalues of the automorphic Laplacian under an analytic family of character perturbations. In fact, we found the simplest model for the basic arithmetic spectral problem where it is not too difficult to prove this conjecture.

15.00 — Kaffepause

15.15

15.15 — DMF-forhold

17.00

A) Præsentation af WMY 2000 aktiviteterne i Danmark ved Tage Bai Andersen

B) Orientering om oprettelse af medlems-database for DMF ved Bodil Branner

C) Orientering om Nyhedsbrev for DMF ved Bodil Branner

D) Demonstration af pilotudgave af elektronisk MAT-NYT kalender ved Jan Philip Solovej.

E) Ekstraordinær generalforsamling

Dagsorden:

1. Bestyrelsen fremlægger forslag til ændrede vedtægter for foreningen. Forslaget blev første gang fremlagt på den ordinære generalforsamling den 22. februar i år. På generalforsamlingen blev det fremlagte forslag vedtaget. Ifølge vedtægterne (§10) skal forslaget for at blive gældende "tilstilles hvert enkelt medlem og vedtages uforandret på den næstfølgende generalforsamling med mindst 2/3 af de afgivne stemmer."

Forslaget er aftrykt på de følgende sider.

2. Eventuelt.

18.30 - Middag på Restaurant René, Banegårdspladsen 12, 8000 Århus C,

tlf. 86 12 12 11

Menu: urtemarineret laks m/salat og ørredrogncreme, rosastegt kalvetykstegsfilet m/friske grøntsager og svampecremesauce, sprød fragilité m/ chokolademousse, frugt og sorbet (inkl. 1/2 flaske vin).

Fredag den 28. maj 1999 i auditorium F:

10.15 — Foredrag v. Hans Föllmer (Humboldt-Universität zu
11.00 Berlin):

Probabilistic Methods in Finance

We review some recent developments in Probability which are motivated by problems of hedging derivatives in incomplete financial markets. This will include new variants of decomposition theorems for semimartingales and some results on Brownian motion suggested by the analysis of simple models for insider trading.

11.00 — Kaffepause
11.15

11.15 — Foredrag v. Mikhail Lyubich (SUNY, Stony Brook):
12.00

Feigenbaum Universality and Holomorphic Dynamics.

The "Feigenbaum Universality Law" discovered about 20 years ago has fascinated both physicists and mathematicians. Physically, it gives a prediction of the transition parameter from "laminar" to "turbulent" regimes. Mathematically, it happened to be a deep problem on the borderline of dynamics, analysis and geometry. In the talk, we plan to discuss mathematical structures behind this problem which have recently led to its solution.

12.00 — Frokost i kantine
13.15

13.15 - Evalueringen af matematikuddannelserne.
16.00

Ordstyrer Bodil Branner.

Ved behandlingen af dette punkt deltager formanden for evalueringens styregruppe Prof. Mogens Flensted-Jensen. Evalueringens matematik-panel samt Naturvidenskabeligt Uddannelsesråd er inviterede.

Oplæg fra de 5 evaluerede universiteter og fra Prof. Mogens Flensted-Jensen.

Kaffepause

Forsamlingen drøfter på baggrund af evalueringen temaerne:

1. Uddannelse og forskning
2. Rekruttering
3. Professionsretning af studierne
4. Arbejdsformer og studiemiljø.

Konklusion

May 10, 1999

LECTURE

**Canadian University Professor of the year 1998--99 Andy Liu,
Edmonton**

Time: 17:15, Place: HC Ørsted Instituttet Aud. 10

The SMART Club

After the lecture the society invites the speaker for dinner at the Restaurant

Quattro Fontane, Guldbergsgade 3. Everyone is welcome to join.

March 1999, Suggested New Members

Bodil Branner and Jan Philip Solovej suggest as new member:

Uffe Høgsbro Thygesen

Norasvej 13, 1.

DK-2920 Charlottenlund

tel (+45) 39 90 01 42

E-mail: uht@imm.dtu.dk

WEB page: <http://www.imm.dtu.dk/~uht>

March 15, 1999

LECTURE

**Professor Gudlaugur Thorbergsson, Mathematisches Institut der
Universität zu Köln**

Time: 17:15, Place: HC Ørsted Instituttet Aud. 10

**Singularities of simple closed curves in the projective
plane.**

Abstract:

ABSTRACT: One can generalize the notion of an inflection point on a curve C in the real or complex plane by replacing the lines by algebraic curves of some given degree n and defining an n -flex to be a point on the curve C that has higher order contact with such an algebraic curve. In the talk I will first explain the history of the problem and then explain results obtained in collaboration with Masaaki Umehara on the existence of 2-flexes (that are also known as sextactic points).

After the lecture the society invites the speaker for dinner at the Restaurant Quattro Fontane, Guldbergsgade 3. Everyone is welcome to join.

February 22, 1999

DANSK MATEMATISK FORENING

Generalforsamling (General assembly)

**Time 17:15, Place Aud 10, HC Ørsted instituttet, Københavns
Universitet**

Dagsorden:

1. Formanden aflægger beretning om foreningens virksomhed.
2. Kassereren forelægger regnskabet for 1998 til godkendelse samt budgetforslag for 1999.
3. Bestyrelsen fremægger forslag til ændrede vedtægter for foreningen.
4. Eventuelt.

Efter generalforsamlingen foredrag af professor Steffen Lilholt Lauritzen Aalborg Universitet.

Efter foredraget inviterer foreningen foredragsholderen på middag i den nærvedliggende Restaurant Quattro Fontane, Guldbergsgade 3. Alle er velkomne til at deltage.

February 22, 1999

LECTURE

Professor Steffen Lilholt, Aalborg Universitet:

Place: HC Ørsted Instituttet Aud. 10 (After the general assembly)

Probabilistic Networks and Expert Systems

Abstract:

Bayesian and other probabilistic networks have now been established as a basic tool for decision support under uncertainty. The theory and methodology was developed in the late 80-s and exploits Markov properties for directed acyclic graphs in combination with old and new algorithms for local computation based on graph theory.

Microsoft Research has established a division to exploit such networks in the computer technology. Hewlett-Packard has instead invested in a research laboratory at Aalborg University and the Aalborg-company HUGIN Expert A/S.

Bayesian networks are for example used for diagnosis of printer errors, surveillance of steering rockets on the space shuttle, medical diagnosis and numerous other applications, for example decoding in noisy communication channels.

The lecture will attempt to convey important aspects of the theory and methodology and the corresponding algorithms, together with a few selected

examples.

A popular exposition of basic ideas (in Danish) can be found in Naturens Verden nr. 7, 1998, with an [on-line version](#).

February 1999, Suggested New Members

Bodil Branner and Jan Philip Solovej suggest as new member:

Helge Bennedsen

Ole Suhrs Gade 21, 3 tv

1354 København K

tel 33 12 37 34

E-mail: hlb@post12.tele.dk

January 1999, Suggested New Members

Bodil Branner and Jan Philip Solovej suggest as new member:

Anders Hyldahl,

Niels Brocks Gade 6, 5. tv.,

1574 København V.

E-mail: hyldahl@mondosoft.com

tel 33 33 00 90

November 1998, Suggested New Members

Henning Haahr Andersen and Niels Lauritzen suggest as new member:

Jesper Funch Thomsen

Institut for matematiske fag

Aarhus universitet

Ny Munkegade Bgn. 530

8000 Aarhus C

E-mail: funch@imf.au.dk

October 8-9, 1998

**DANISH MATHEMATICAL SOCIETY
CELEBRATES**

ITS 125TH ANNIVERSARY

Place: Aud 4, HC Ørsted instituttet, Københavns Universitet

Everyone is welcome to attend the lectures. [Registration \(see below\)](#) is required for the banquet Thursday night and the lunch on Friday.

Schedule:

Thursday October 8	
14:15-14:30	Welcome by President Bodil Branner
14:30-15:30	Lecture by Sir Christopher E. Zeeman, Oxford University ``Applications of catastrophe theory to the physical, biological, and behavioural sciences''
15:30-16:00	Coffee Break
16:00-16:30	Official Guests <ul style="list-style-type: none"> • Direktør Ove Poulsen, Forskningsministeriets forskningssøjle
16:30-16:45	Extraordinary general assembly of the Danish Mathematical Society
	Agenda: <ul style="list-style-type: none"> • Election of honorary member • Other
16:45-17:45	Lecture by Professor Ebbe Thue Poulsen, Aarhus Universitet, ``Matematisk retfærdighed'' (In Danish)
17:45-18:45	Refreshments
19:00-23:00	Banquet at the Panum Institute, Blegdamsvej 3B. (Registration: see below)
Friday October 9	
9:00-10:00	Lecture by Professor Olli Martio, University of Helsinki, Finland: ``Harmonic measure -- a stability point of view'' .
10:00-10:15	Coffee break
10:15-11:15	Lecture by Professor Dana Schlomiuk, Universite de Montreal, Canada: ``Dynamical systems and number theory: some parallel developments and analogies'' .
11:15-11:30	Coffee break
11:30-12:30	Lecture by Professor Jan--Olov Strömberg, Kungliga Tekniska Högskolan, Sverige: ``Wavelets with applications'' .
12:30-13:30	Lunch (Registration: see below)
13:30-14:30	Lecture by Lektor Bjarne Toft, Odense Universitet: ``Dansk matematiks moderne gennembrud i 1870'erne'' (in Danish)

14:30-15:00	Coffee break
15:00-16:00	Lecture by Adjunkt Kurt Ramskov, Københavns Universitet: "Dansk Matematisk Forening gennem 125 år:nogle episoder og indtryk" (in Danish)
16:00-16:30	Discussion

Registration for the banquet Thursday night and lunch on Friday

The banquet Thursday night costs 200 Kr per participant. The lunch on Friday is 50 Kr. Registration (including the names of all participants) and payment (on giro or by check) should be sent to the treasurer of Danish Mathematical Society no later than September 23. The treasurer is

*Mogens Esrom Larsen
Institut for Matematiske Fag
Københavns Universitet
Universitetsparken 5
2100 København Ø
Tlf. 35 32 07 45
e-mail: mel@math.ku.dk
Giro: 4027841*

October 8, 1998

LECTURE

Professor Sir Christopher Zeeman, Oxford University

Place: HC Ørsted Instituttet Aud. 4 Time: 14:30

**Applications of catastrophe theory to the physical,
biological, and behavioural sciences**

ABSTRACT

Catastrophe theory was discovered by Rene Thom in the 1960s, and is a method of mathematical modelling that is particularly applicable to phenomena in which continuous causes give rise to discontinuous effects. It is based on deep theorems in topology that classify the bifurcations of nonlinear parametrised dynamical systems in terms of geometrical singularities of functions.

The lecture will give an introduction to the theory and describe a number of applications of the cusp catastrophe, as follows. In physics a beam may suddenly buckle under gradually increasing load. Similarly in economics a currency may suddenly devalue under gradually increasing speculative pressure. Models of inflation explosions and stabilisation crises have indicated possible alternative fiscal policies.

In medicine a model of hyperthyroidism has suggested a successful cure. In psychology a model of fight/flight mechanism describes and explains the sudden changes of mood observable in dogs, humans, and children. Applying the same model to territorial fish has led to the prediction and experimental confirmation of the double boundaries of their territories. Models of sudden changes of perception have helped the understanding of human behaviour, mental illness, psychoanalysis and fiction.

October 8, 1998

LECTURE

Professor Ebbe Thue Poulsen, Aarhus Universitet

Place: HC Ørsted Instituttet Aud. 4 Time: 16:45

Matematisk retfærdighed

ABSTRACT

Inden for sidste halvdel af vort århundrede har matematiske synspunkter vundet indpas mange steder inden for samfundsvidenskaberne, sommetider givetvis til overraskelse både for udenforstående og for fagfolk.

Foredraget vil handle om, hvordan man --- hvis det skal gå retfærdigt til --- skal fordele mandaterne i Folketinget efter et valg, en problemstilling hvor brugen af matematik ikke er så overraskende endda, og hvor den iøvrigt går mere end 100 år tilbage.

Først beskrives en af de mest almindelige mandatfordelingsmetoder, og det påvises at den har nogle uventede egenskaber.

Derefter formuleres nogle ``aksiomer'' for retfærdighed, dvs nogle principper som de fleste vil mene er rimelige krav til en metode som gør fordring på betegnelsen retfærdig. Desværre viser det sig at det er umuligt at opfylde disse krav.

Til slut diskuteres en anden angrebsvinkel, nemlig spørgsmålet om at kvantificere uretfærdighed med henblik på at minimere den.

October 9, 1998

LECTURE

Professor , Olli Martio, University of Helsinki, Finland

Place: HC Ørsted Instituttet Aud. 4 Time

Harmonic measure -- a stability point of view

ABSTRACT

Several definitions for the classical harmonic measure of a set E on the boundary of a domain in \mathbb{R}^n are considered and the concept is extended to more general quasilinear elliptic equations than the Laplace equation. If the Laplace equation is perturbed, then the harmonic measure associated with the perturbed equation differs from the classical harmonic measure. Those sets E whose harmonic measures do not change much in this process are of practical interest and classes of stable sets in this context are studied.

October 9, 1998

LECTURE

Professor Dana Schlomiuk, Universite de Montreal, Canada

Place: HC Ørsted Instituttet Aud. 4 Time

Dynamical systems and number theory: *some parallel developments and analogies*

ABSTRACT

In this lecture we shall consider some open problems on polynomial real time dependent dynamical systems and survey some developments on these problems from the time they were stated about a century ago until now. Although analysis has had the upper hand in some developments, we shall underline the role of geometry and algebra and draw a parallel in dates coupled with analogies in content with the recent developments in number theory (Fermat's Last Theorem) and diophantine geometry. Interesting new work in which algebra and geometry play a major role, indicates that more

common ground may be present in the analogies.

October 9, 1998

LECTURE

Professor Jan--Olov Strömberg, Kungliga tekniska högskolan, Sverige

Place: HC Ørsted Instituttet Aud. 4 Time

Wavelets with applications.

ABSTRACT

Wavelets have shown to be a valuable tool when handling large set of data with computers. Examples are in signal processing for manipulation of image and sound signals. Wavelet methods are also used to reduce complexity in numerical computations. In this talk I will go through some basic principles of the wavelet construction and also illustrate some of the applications in sound and image processing.

October 9, 1998

LECTURE

Lektor [Bjarne Toft](#), Odense Universitet.

Place: HC Ørsted Instituttet Aud. 4 Time

Dansk matematiks moderne gennembrud i 1870'erne

ABSTRACT

Året 1871, hvor Georg Brandes starter sit moderne gennembrud, er også et gennembrud for faget matematik i Danmark. Ansættelserne af Zeuthen og Petersen på henholdsvis Universitetet og Den Polytekniske Læreanstalt markerer et generationsskifte. I de lærde skoler indføres en matematisk-naturvidenskabelig gren. 1871 er også året hvor Socialdemokratiet, Den Danske Bank og Dansk Kvindesamfund stiftes. På Carlsberg startes et laboratorium og et nyt anneks bryggeri indvies. Den første børnehave i Danmark oprettes. I Ryslinge på Fyn opføres det første landsby forsamlingshus. De mange nye tiltag fortsætter i årene derefter. I 1872

indvier Industriforeningen sin nye bygning udenfor voldene ved Tivoli. Den Nordiske Kunst- og Industri-Udstilling afholdes. Dansk Nationaløkonomisk Forening dannes. I 1873 grundlægges Tuborg, og den 8. oktober 1873 kl. 20 er der på Østergade 15 stiftende generalforsamling i Dansk Matematisk Forening.

Foredraget fortæller bredt om tiden og hvad der rørte sig i den, set fra faget matematiks synsvinkel. Der illustreres med billeder og tekster fra dengang.

October 9, 1998

LECTURE

Adjunkt [Kurt Ramskov](#), Københavns Universitet

Place: HC Ørsted Institut Aud. 4 Time

Dansk Matematisk Forening gennem 125 år: nogle episoder og indtryk

ABSTRACT

Foredraget vil beskrive nogle udvalgte episoder fra foreningens 125 årige historie, som jeg finder betydningsfulde eller interessante. Det drejer sig om:

1. Aktiviteterne som førte til skabelsen af Det matematiske Laboratorium i 1907 og hvad dette udviklede sig til.
2. Ifølge en artikel i *Ekstrabladet* fra 1917 blev foreningen boykottet af nogle af de danske matematikere. Hvad skete der?
3. Diskussionen af Danmarks holdning til invitationen fra ententelandene til deltagelse i "international" samarbejde uden centralmagterne efter 1. verdenskrig.
4. Indtrædelse i et nordisk samarbejde om tidsskriftsudgivelse i 1953.
5. Landsmøderne i 1970 og 1981.

Med udgangspunkt i disse episoder vil jeg sluttelig forsøge at give et overordnet indtryk af foreningens aktiviteter og disses betydning for matematikken i Danmark gennem foreningens 125 år. Dette ville kunne ses som et oplæg til en diskussion af foreningens fremtidige rolle for dansk matematik.

September 1998, Suggested New Members

Bodil Branner and Martin Raussen suggest as new members:

Lars Hesselholt
Department of Mathematics
Massachusetts Institute of Technology
77 Massachusetts Avenue
Cambridge, MA 02139
USA
email: larsh@math.mit.edu

and

Susanne G. Bøttcher
Matematisk Afdeling
Institut for Elektroniske Systemer
Fredrik Bajers Vej 7E
9220 Aalborg Ø
email: alma@math.auc.dk

June 8, 1998

LECTURE

**Lektor Jørgen Ellegaard Andersen, Matematisk Afdeling, Aarhus
Universitet**

**Place: Auditorium 38, Building 306, Technical University of Denmark
Time: 17:15**

**Universal Vassiliev invariants of links in cylinders over
oriented surfaces**

ABSTRACT

Vassiliev invariants of links are very natural and seemingly simple invariants of links in 3-manifolds. It is still unknown if they classify links, but they are stronger than all the known polynomial and quantum invariants of knots and links we know.

They were introduced by Birman and Lin based on their study of Vassiliev's approach to the topology of the space of links. Bar-Natan and others quickly realised that these invariants had to do with Feynman diagrams. The main question then arose: Is there a universal Vassiliev invariant, that is a formal power series of Vassiliev invariants, which dominates all other Vassiliev invariants? More conceptually, this can be formulated as: Is the associated graded space of the filtered space of Vassiliev invariants isomorphic to the graded dual space of Feynman diagrams?

A couple of years ago Kontsevich answered this question affirmatively in the case of links in the 3-sphere. We shall in this talk explain his construction and then go onto the alternative construction due to Bott and Taubes and finally explain the recent construction of universal Vassiliev invariants for links in cylinders over arbitrary compact oriented surfaces due to Andersen, Mattes and Reshetikhin.

After the lecture the society invites the speaker for dinner at the restaurant Fortunen. Everybody is welcome to join.

June 1998, Suggested New Members

Hans-Jørgen Munkholm and Henrik Pedersen suggest as new members of DMF

Peder Thusgaard Ruhoff

*Mærsk Mc-Kinney Møller Institutet for Produktionsteknologi,
Odense Universitet
Campusvej 55
5230 Odense M
e-mail: ptr@mip.ou.dk*

Christina W. Tønnesen-Friedman

*Dept. of Mathematics
Ny Munkegade
University of Aarhus
8000 Aarhus C
Denmark
+45 89 42 34 61*

Lisbeth Fajstrup and Martin Raussen suggest as new member of DMF

E. Susanne Christensen

*Afdeling for Matematik
Fredrik Bajers Vej 7E
9220 Ålborg & Oslas;st
e-mail: susanne@math.auc.dk*

Bodil Branner and Steen Markvorsen suggest as new member of DMF

cand. polyt. Jakob Hall

*Maagevej 63, 3. th.
2400 Kbh NV
email j.hall@mat.dtu.dk*

April 20, 1998

LECTURE

Prof. S. Klainerman, Princeton University

Place: Aud. 10, HC Ørsted Institutet, Time: 17:15

Fourier Analysis and Nonlinear Wave Equations

ABSTRACT

While Fourier Analysis has always played a major role in the linear theory of dispersive and hyperbolic equations it was by no means clear that it could also be profitably applied to the study of nonlinear equations. Starting with the pioneering work of Stein, Tomas and Strichartz on the "restriction phenomenon" we now have a convincing body of work, based on Fourier Analysis, which applies to the basic question of regularity solutions of interesting classes of nonlinear wave equations. I plan to survey some of the main new ideas while giving special attention to the "Bilinear restriction" estimates point of view.

After the lecture the society invites the speaker for dinner at the restaurant Quattro Fontane. Everybody is welcome to join.

April 1998, Suggested New Members

Steffen Lauritzen and Lisbeth Fajstrup suggest the following as new members of DMF:

Dennis Nilsson, email: nilsson@math.auc.dk
Martin Bøgsted Hansen, email: mbh@math.auc.dk
Claus Dethlefsen, email: dethlef@math.auc.dk
Michael Melgaard, email: mm@math.auc.dk

All at

*Afdeling for Matematik, Aalborg Universitet,
Fredrik Bajers Vej 7E,
9220 Aalborg Øst*

Jens Henrik Badsberg

*Afdeling for Jordbrugssystemer
Forskningscenter Foulum
PB50
8630 Tjele
email: jhb@dina.math.auc.dk*

Henrik Thomsen

*Aalborg Universitet
Fibigerstræde 13, 44
9220 Aalborg Øst
email:henrikib@i4.auc.dk*

Last modified 27th February, 2001
webmaster@mathematics.dk