INFOMAT

Februar 2016

ABELPRISEN FOR 2016 TILDELES

?

Navnet på vinneren offentliggjøres 15. mars 2016 kl. 1200.

Matematisk kalender

2016:
Mars:
15. Abelprisen, offentliggjøring, Oslo
16.-20. 27. Nordic Congress of Mathematicians, Stockholm
April:
21.-22. ASGARD Math 2016, Oslo
Mai:
23.-25. Abeluken med prisutdeling, Oslo
Juni:
30.-1. juli: AGMP 2016, Tromsø
August:
16.-19. Abelsymposiet: *Computation and Combinatorics in Dynamics, Stochastics and Control*, Baroniet Rosendal
2017:
Januar:
27.-29. Ragni Piene 70, Oslo

ASGARD MATH 2016
A Scandinavian Gathering Around Remarkable Discrete Mathematics, UiO, 21.-22. april 2016

The ASGARD Math meetings are informal two-day meetings aimed at facilitating communication and interaction between mathematicians in Scandinavia interested in discrete mathematics and other related fields. These meetings will take place every year during the spring.
https://sites.google.com/site/asgardmath/

AGMP 2016
Algebraic Geometry and Mathematical Physics, Tromsø, 30. juni-1. juli 2016

A conference in honor of Arnfinn Laudal on his 80'th birthday. The conference will take place at the University of Tromsø (Norway), 30th June and 1st July 2016. The conference will consist of 4 invited lectures and contributed presentations. The conference will cover, but is not limited to, the main themes: Algebra, Geometry, dynamical symmetries and conservation laws, mathematical physics and applications.
http://site.uit.no/agmp/

27TH NORDIC CONGRESS OF MATHEMATICS IN STOCKHOLM

The 27th Nordic Congress of Mathematics in Stockholm be already very soon (March 16-20). The programme of the congress is very interesting.
1. I would like you to encourage members of your Societies to come to the congress and, if possible, provide with some financial support those who would like to attend the congress.
Note that we do not have any conference fees. Moreover, we shall provide free coffee and free lunches during the Congress.
2. If you are planning to come to Stockholm please register yourself and send information about the congress
http://www.mittag-leffler.se/congress-2016
to everyone at your Department + ask those who are planning to come to Congress to register http://www.mittag-leffler.se/congress-2016/registration
3. Please let people know that there will be two public lectures at hall E1, KTH, Stockholm, on the 15th of March, given by
13:00-14:00: Donald Ervin Knuth: All questions answered,
14:00- 15:00: Cedric Villani: TBA

With best wishes,
Ari Laptev

Nye doktorgrader

Erik Parmann disputerte fredag 22. januar 2016 for ph.d.-graden ved Universitetet i Bergen med avhandlingen: *Case Studies in Constructive Mathematics.*
Sammendrag:
Datamaskiner styrer mye i dagens samfunn, og i noen tilfeller vil en "blåskjerm" være en katastrofe. Vi ønsker å være sikker på at programvaren som styrer en pacemaker eller et fly ikke slår seg av i tide og utide. For å bli virkelig sikker kan vi bevise matematisk at programvaren aldri slår seg av ukontrollert: at den kan fortsette i det uendelige.

Uheldigvis er det komplisert å bevise ting om programvare, så komplisert at vi trenger hjelp av et annet stykke programvare for å hjelpe oss med å holde styr på beviset. Men da trenger vi et begrep om endelighet og uendelighet som datamaskinen kan jobbe med.

Avhandlingen bruker konstruktiv matematikk for å undersøke forskjellige former for endelighet, avgjøre styrkeforhold mellom dem, og bevise nye egenskaper om de forskjellige konseptene.

Konstruktiv matematikk er en gren av matematikk hvor beviser korresponderer med algoritmer, og ved å studere konsepter som endelighet konstruktivt får vi resultater som vi kan tilbakeføre til datamaskinen.

M. Sc. **Hanna Marta Zdanowicz** ved UiO forsvarte 12. februar 2016 sin avhandling for graden ph.d.: *Pricing and hedging in energy markets with weather factor risk.* Veiledere har vært Professor Fred Espen Benth, UiO og Lecturer Almut Elisabeth Dorothea Veraart, Matematisk institutt, Imperial College London.

Sammendrag

Weather has a great direct influence on electricity from both a supply and demand point of view. For example, a cold winter means a greater demand for heating whereas large volumes of rain and snow provide water to the reservoirs for hydropower production. Moreover, other factors, like gas and coal prices or carbon emission certificates, have impact on electricity prices via production costs. The renewable energy producers receive operating subsidies in order to stimulate the development of this category; at the same time the traditional power producers are penalised and their operating costs are increased by the carbon emission certificates. All of this translates into a need for risk management tools capable of hedging against weather conditions directly and indirectly through unfavorable changes in prices. Such tools can be options written on the spread between the electricity price and the fuel price and financial instruments based on weather indices.

In this thesis we consider spread options with bivariate geometric Brownian dynamics with time-varying parameters. We extend several approximation methods to this model and develop a pricing method based on the Taylor expansion. We also work with a rich class of volatility modulated Volterra (VMV) processes as the price dynamics. These processes are important in modelling energy markets as they can capture the characteristics like spikes in prices and stochastic volatility. We derive the price of a spread option based on two commodities with dynamics described by a bivariate VMV process. We compute the quadratic hedge for the spread option. We illustrate the theory with numerical examples.

We tackle the problem of finding simple models that can describe solar power production accurately by time series methods without including additional weather related regressors. We compare the output from the models with forecasts provided by the producers. The study reveals that models work very well compared to rather complex models used by the TSOs. We conclude that the approach of modelling photovoltaic power generation by time series methods can be useful and provides valuable insight into the market.

Lastly, we extract smooth CAT curves from the finite set of CDD and HDD prices quoted at the CME. We find a theoretical functional connection between CATs and CDDs/HDDs in case of Orstein-Uhlenbeck temperature dynamics and use the Nelson-Siegel parametrisation to model the CAT curve. We calibrate the curve and then recover the CDD/HDD prices. We show empirically that after including the seasonality function in the parametrisation, the original Nelson-Siegel curve reduces to a constant.

Nyheter

FORSKNINGSTERMINER, NTNU

Nils A. Baas (Institute for Advanced Study, Princeton, USA) og Nikolai Ushakov har forskningstermin våren 2016.

Ledige stillinger

LEDIGE STIPENDIAT OG POST-DOK-STILLINGER I OSLO

Applications are invited for one PhD and up to two 2-years postdoc positions at University of Oslo. Further details are available on the websites:
http://uio.easycruit.com/vacancy/1581681/64285?iso=no
http://uio.easycruit.com/vacancy/1581709/64285?iso=no
The successful applicants will become members of the RCN top-tier research project "Motivic Hopf Equations"
http://www.mn.uio.no/math/english/research/projects/mhe/index.html
The project has a generous budget for inviting guests, and offers considerable travel money. The closing date is **March 2, 2016.** Feel free to direct questions to me.
Best regards,
Paul Arne Østvær

STIPENDIAT-STILLINGER I STAVANGER

At the university of Stavanger we have two PhD positions available with deadline **March 6, 2016.** For details, see links below.
best wishes,
Sigbjørn Hervik

PhD position in mathematics:
https://www.jobbnorge.no/en/available-jobs/job/121687/research-fellow-in-mathematics

PhD position in Theoretical Physics/mathematics:
https://www.jobbnorge.no/en/available-jobs/job/121737/phd-fellowship-in-mathematics-and-physics

LEDIGE STILLINGER VED HØGSKOLEN I BERGEN

Her er lenker til de to stillingene:

https://www.jobbnorge.no/ledige-stillinger/stilling/121680/phd-research-fellows-in-mathematical-modelling-and-numerical-simulation
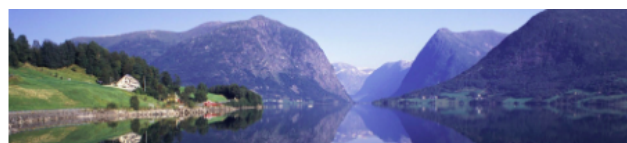Søknadsfrist: **20. mars 2016**

https://www.jobbnorge.no/ledige-stillinger/stilling/122312/matematikk-foersteamanuensis-foerstelektor-hoegskolelektor-inntil-to-stillinger
https://www.jobbnorge.no/ledige-stillinger/stilling/122438/phd-research-fellowship-positions-in-computational-mathematics
De to siste stillingene har søknadsfrist 3**0. mars 2016**

Abel Symposium 2016
Computation and Combinatorics in Dynamics, Stochastics and Control
August 16-19, 2016
Barony Rosendal
Norway

Speakers
Philippe BIANE (Paris, France)
Anthony BLOCH (Ann Arbor, USA)
Percy DEIFT (New York, USA)
Fred ESPEN BENTH (Oslo, Norway)
Loïc FOISSY (Calais, France)
Geir BOGFJELLMO (Gothenburg, Sweden)
W. Steven GRAY (Norfolk, USA)
Robert GROSSMAN (Chicago, USA)
Massimiliano GUBINELLI (Paris, France)
Alice GUIONNET (Massachusetts, USA)
Martin HAIRER (Warwick, UK)
Uwe HELMKE (Würzburg, Germany)
Yaozhong HU (Lawrence, Kansas, USA)
Xue-Mei LI (Warwick, UK)
Simon J. A. MALHAM (Edinburgh, UK)
Dominique MANCHON (Clermont-Ferrand, France)
Frédéric MENOUS (Paris, France)
Ander MURUA (San Sebastian, Spain)
Giovanni PECCATI (Luxembourg)
Christophe REUTENAUER (Montreal, Canada)
Roland SPEICHER (Saarbrücken, Germany)
Agnès SULEM (INRIA, Paris, France)

Scientific Committee
Elena CELLEDONI (Trondheim, Norway)
Terry LYONS (Oxford, UK)
Bernt ØKSENDAL (Oslo, Norway)
Frédéric PATRAS (Nice, France)
Jesus SANZ SERNA (Valladolid, Spain)

Organizing Committee
Giulia DI NUNNO (Oslo, Norway)
Kurusch EBRAHIMI-FARD (Madrid, Spain)
Alexander LUNDERVOLD (Bergen, Norway)
Hans MUNTHE-KAAS (Bergen, Norway)
Brynjulf OWREN (Trondheim, Norway)
Olivier VERDIER (Bergen, Norway)
Antonella ZANNA (Bergen, Norway)