



INFOMAT

September 2017



Christian Skau, NTNU

INTERVJUET MED ABELPRISVINNEREN YVES MEYER SENDES PÅ NRK KUNNSKAPSKANALEN, LØRDAG 23. SEPTEMBER 2017 KL. 1700

For de som ikke har anledning til å se programmet er det mulig å lese hele intervjuet i en mer “matematisk” versjon på

<http://www.ems-ph.org/journals/newsletter/pdf/2017-09-105.pdf>



Bjørn Dundas, UiB



INFOMAT kommer ut med 11 nummer i året og gis ut av Norsk Matematisk Forening. Deadline for neste utgave er alltid den 15. i neste måned. Stoff til INFOMAT sendes til

arnebs at math.uio.no

Foreningen har hjemmeside <http://www.matematikkforeningen.no/>

Ansvarlig redaktør er Arne B. Sletsjøe, Universitetet i Oslo.

ARRANGEMENTER

Matematisk kalender

2017:

November:

8.-9. FINEWSTOCH Workshop II, Oslo

9.-10. Nasjonalt algebramøte, Oslo



**NASJONALT ALGEBRAMØTE, Oslo,
9.-10. november 2017**

Årets nasjonale algebramøte finner sted 9.-10. november 2017 i Oslo, se webside: <http://www.mn.uio.no/math/forskning/grupper/algebra/arrangementer/nasjonaltmote2017/>

**FINEWSTOCH Workshop II, Oslo,
8.-9. november 2017**

Welcome to the second FINEWSTOCH Workshop. The workshop will bring together leading researchers in stochastics and probability theory to discuss recent developments with a particular focus on finance, insurance, energy and weather.

Time and place: Nov. 8, 2017 12:00 PM - Nov. 9, 2017 1:00 PM, Seminar room: "Gates of Eden", Matematisk Institutt, 2nd Floor, Sognsveien 77B, Ullevål Stadion

The FINEWSTOCH Workshop II will consist of several invited talks, starting with a lunch on Wednesday November 8, 2017. We end the Workshop with a lunch on Thursday November 9. Participation is free of charge, but registration is mandatory.

Invited speakers:

Nacira Agra, Oslo, **Fabian Andsem Harang**, Oslo
Tore Selland Kleppe, Stavanger

nika Lang, Chalmers, **Frank Norbert Proske**, Oslo, **Yinzhi Wang**, Oslo

Please register by sending an email to Salvador Ortiz-Latorre (salvadoo "at" math.uio.no) before November 1, 2017. Note that you must be registered to participate. A confirmation email will be sent to those registered. There is a limited number of seats. There is no registration fee.



Nye doktorgrader

Torkil Utvik Stai forsvarte 31. august 2017 sin avhandling *On orbit and localization constructions for triangulated categories* for graden Ph.D. ved NTNU. Veileder har vært Prof. Steffen Oppermann, NTNU.

Sammendrag:

In representation theory, the introduction of the cluster category sent orbit categories into prominence a good decade ago. However, these categories retain an air of mystery around them: Even the basic question of whether or not an orbit category of a triangulated category is again triangulated, remains unanswered in most cases. The first part of the thesis deals with a certain instance of this problem.

In the second part of the thesis, we investigate the behavior of certain homological invariants along a morphism of rings. More precisely, we identify conditions ensuring that the classical change of rings functors induce functors between the two singularity categories or the two stable categories of Gorenstein projective modules. We moreover study this problem on the level of compactly generated completions and along the

way we establish an explicit construction of a certain right adjoint which seems to be of independent interest.

Jørgen Endal forsvarte 1. september 2017 sin avhandling *On degenerate parabolic problems with local and nonlocal diffusion* for graden Ph.D. ved NTNU. Hovedveileder har vært Prof. Espen R. Jakobsen, NTNU, og biveileder Prof. Peter Lindqvist, NTNU.

Sammendrag:

The nonlinear partial differential equations under study in this PhD thesis are the Hamilton-Jacobi-Bellman equations (HJB), the convection-diffusion equations (CDE), and the generalized porous medium equations (GPME). The last two describe transport phenomena governed by either convection and diffusion or just diffusion, and the first is related to optimal control problems. Here, we allow for both local and nonlocal diffusion; nonlocal in the sense that the diffusion is governed by a pure-jump Lévy operator (anomalous/nonlocal diffusion operator).

The main topics of the thesis are:

Duality relations between HJB and CDE: We find weighted L^1 -contraction estimates for L^∞ -entropy solutions of CDE with L^1 -viscosity solutions of HJB as weights. To do so, we need to recall/further develop a “well-posedness” theory for discontinuous viscosity solutions of HJB, and also nonstandard L^1 -type estimates for such solutions. Theory and numerical analysis of GPME: We provide very general uniqueness and a priori results for distributional solutions of GPME. Through the discovery that numerical discretizations of the Lévy operator are again Lévy operators, we develop a novel numerical theory for GPME from scratch. Nonlocal diffusion operators with x -dependence are also considered.

Nyheter

CHORAFAS-PRISEN TIL OLAV MØYNER

Olav Møyner har mottatt Chorafas-prisen i 2017. Olav Møyner disputerte ved NTNU i desember i fjor og hadde Helge Holden og Knut-Andreas Lie som veiledere.

MANGE NYTILSATTE VED UIO

Susanne Liese, Tyskland, post.dok i mekanikk fra 15. september 2017

Marc Lagunas, Spania, stipendiat i matematisk finans fra 18. september 2017

Lorenzo Ciardo, Italia, stipendiat i kombinatorisk matriseteori fra 12. september 2017

Daniel Piacek, Slovakia, stipendiat i statistikk fra 11. september 2017

Olfa Draouil, Tunisia, post.dok i finans fra 8. september 2017

Tak Shing Chan, Kina, post.dok i mekanikk fra 1. september 2017

Christian Pedersen, Norge, stipendiat i mekanikk fra 21. august 2017

Tuyen Trung Truong, Vietnam, førsteamanuensis i flere komplekse variable fra 1. september 2017

Ulrik Skre Fjordholm, Norge, førsteamanuensis i PDE fra 1. juli 2017

Rossana Virginia Rojas Molina, Venezuela, stipendiat i mekanikk fra 14. august 2017

Gard Olav Helle, Norge, stipendiat i geometri fra 14. august 2017

Sabrina Pauli, Tyskland, stipendiat i topologi fra 1. august 2017

Erik Grandelius, Sverige, stipendiat i PDE fra 15. mai 2017

Jonas Moss, Norge, stipendiat i statistikk fra 1. august 2017

Martin Tveten, Norge, stipendiat på Big Insight fra 1. august 2017

Silvia Lavagnini, Italia, stipendiat i stokastisk analyse fra 1. august 2017

Luca Galimberti, Italia, post.dok på STOCOLA fra 22. mai 2017

MATHEMATICAL MYSTERY OF ANCIENT BABYLONIAN CLAY TABLET SOLVED

UNSW Sydney scientists have discovered the purpose of a famous 3700-year old Babylonian clay tablet, revealing it is the world's oldest and most accurate trigonometric table, possibly used by ancient mathematical scribes to calculate how to construct palaces and temples and build canals.

The new research shows the Babylonians beat the Greeks to the invention of trigonometry - the study of triangles - by more than 1000 years, and reveals an ancient mathematical sophistication that had been hidden until now.

Known as Plimpton 322, the small tablet was discovered in the early 1900s in what is now southern Iraq by archaeologist, academic, diplomat and antiquities dealer **Edgar Banks**, the person on whom the fictional character Indiana Jones was based.

It has four columns and 15 rows of numbers written on it in the cuneiform script of the time using a base 60, or sexagesimal, system.

"Plimpton 322 has puzzled mathematicians for more than 70 years, since it was realised it contains a special pattern of numbers called Pythagorean triples," says Dr Daniel Mansfield of the School of Mathematics and Statistics in the UNSW Faculty of Science.

"The huge mystery, until now, was its purpose - why the ancient scribes carried out the complex task of generating and sorting the numbers on the tablet."

"Our research reveals that Plimpton 322 describes the shapes of right-angle triangles using a novel kind of trigonometry based on ratios, not angles and circles. It is a fascinating mathematical work that demonstrates undoubted genius."

"The tablet not only contains the world's oldest trigonometric table; it is also the only completely accurate trigonometric table, because of the very different Babylonian approach to arithmetic and geometry."

"This means it has great relevance for our modern world. Babylonian mathematics may have been out of fashion for more than 3000 years, but it has possible practical applications in surveying, computer graphics and education."



"This is a rare example of the ancient world teaching us something new," he says.

The new study by Dr Mansfield and UNSW Associate Professor Norman Wildberger is published in *Historia Mathematica*, the official journal of the International Commission on the History of Mathematics.

A trigonometric table allows you to use one known ratio of the sides of a right-angle triangle to determine the other two unknown ratios

Utlysninger

INSTITUTTLEDER VED INSTITUTT FOR MATEMATIKK OG STATISTIKK I TROMSØ

Det er en ledig stilling som instituttleder ved institutt for matematikk og statistikk, UiT-Norges arktiske universitet

Se: <https://www.jobbnorge.no/ledige-stillinger/stilling/142131/instituttleder-ved-institutt-for-matematikk-og-statistikk-fakultet-for-naturvitenskap-og-teknologi-aaremaal>

Søknadsristen er **2. oktober 2017**, og tiltenkt tilsetting 1. januar 2018.

