INFOMAT

November 2018

NOMINASJONER FOR HOLMBOEPRISEN 2019

Kjenner du en matematikklærer som fortjener en pris?

Holmboeprisen gis til en lærer eller en gruppe lærere i grunnskole eller videregående skole som har utmerket seg i sitt arbeid med matematikkfaget. Prisen, som er på 100 000 kr, er finansiert av Abelstyret ved det Norske Videnskaps-Akademi, og skal deles likt mellom prisvinneren og skolen som han eller hun kommer fra.

Alle kan nominere kandidater til Holmboeprisen. Det er mulig å nominere en enkelt lærer eller en gruppe lærere som sammen har gjort en innsats for matematikkfaget.

Vi ber om hjelp med å formidle denne invitasjonen videre til alle dem som kan være interessert i å foreslå kandidater, f.eks. til avdelingsleder for realfag og til elevrådet.

Holmboeprisen deles ut hvert år, neste gang 20. mai, 2019

Mer om nominasjonen på side 8.

Matematisk kalender

2018:
Desember:
6.-8. *Enumeration and Moduli*, Oslo
2019:
Januar:
7.-11. *Winter school on Connes' embedding problem and quantum information theory,* Oslo

ENUMERATION AND MODULI, Oslo, 6.-8. desember 2018

A conference in algebraic geometry on the occasion of Geir Ellingsrud's 70th birthday. For further information, see: *http://www.mn.uio. no/math/english/research/ groups/algebra/events/conferences/Enumerationandmoduli/index.html*

WINTER SCHOOL ON CONNES' EMBEDDING PROBLEM AND QUANTUM INFORMATION THEORY, Oslo, 7.-11. januar 2019

Connes' embedding problem is one of the long standing open problems in Operator Algebras. Since it was raised in 1976, several equivalent formulations, seemingly unrelated to it, have been found, also in other areas of mathematics. In particular, it is equivalent to the (weak) Tsirelson problem in Quantum Information Theory.

The aim of the winter school is to upgrade the knowledge of all operator algebraists at NTNU and UiO, in particular master and PhD students, on these important topics and to review some of the recent developments.

The school is a part of the project *Pure Mathematics in Norway, 2018-2022*, supported by the Bergen Research Foundation and the Tromsø Research Foundation.

The main programme will consist of four series of lectures given by some of the experts on these topics (see below). There will also be a three additional lectures, by **Mikael Rørdam, Alexander Müller-Hermes** and **Jitendra Prakash**, all from the University of Copenhagen.

Benoît Collins (Kyoto University, Japan): *A noncommutative probability point of view on the Connes embedding problem.*

Magdalena E. Musat (University of Copenhagen, Denmark): *Von Neumann algebras meet Quantum Information Theory.*

Narutaka Ozawa (RIMS Kyoto, Japan): *Connes's Embedding Problem and its equivalents.*

Vern Paulsen (University of Waterloo, Canada): *C*-algebras and non-local games.*

The number of participants is strictly limited and participation is only possible by personal invitation from the organizing committee.

https://www.mn.uio.no/math/english/research/ groups/operator-algebras/events/conferences/cep-qit-2019/cep-qit-2019.html

ICIAM 2019

The 9th International Congress on Industrial and Applied Mathematics (ICIAM 2019) will be held in Valencia, Spain, on 15th-19th July 2019.

Organized by the Spanish Society of Applied Mathematics (SEMA) under the auspices of the International Council for Industrial and Applied Mathematics (ICIAM), ICIAM 2019 will showcase the most recent advances in industrial and applied mathematics.

-Minisymposium proposals: December 10, 2018 (extended)

Submission deadlines:

- Minisymposia: December 10, 2018 (extended)

- Contributed Papers: January 7, 2019

- Posters: April 1, 2019

Find the category that best suits your proposal:

- Thematic contributions encompassing over 25 topics

- Industrial Mathematics contributions

Financial support program to attend iciam 2019:

- Application deadline February 25, 2019

Industry day at ICIAM 2019:

A full day activity where industry speakers selected

from a broad range of sectors will show the high innovation potential of mathematics.

Further information may be found at https://www.iciam2019.com

Sign up for ICIAM 2019 Newsletters to keep you updated on all the information about the Congress.

MINI-SYMPOSIUM AT THE SIAM DYNAMICAL SYSTEMS CONFERENCE IN SNOWBIRD, UTAH, May 19-23, 2019

We are organizing a mini-symposium at the SIAM Dynamical Systems Conference in Snowbird, Utah, on May 19-23 (https://www.siam.org/Conferences/CM/Main/ds19). Our session is preliminarily entitled Coupling Marine Ecosystem Dynamics to Environmental Change (see description below) and we will be focusing on understanding how marine species respond to variability in the marine environment.

Each talk will be 25 minutes long, and SIAM asks us to emphasize that participants may present only once.

To participate, by
• November 5, 2018 – Email samuels@imr.no to express your interest
• November 10, 2018 – Send an abstract/title to be included in the mini-symposium proposal

Depending on interest and quality of papers, we may consider publication of a special issue based on the minisymposium theme.

Most existing (mathematical/statistical) models for assessing marine ecosystem state are premised on gradual changes in the marine enviroment and in the response of the biological systems. However, recent changes in marine ecosystems are either anomalous (high-frequency, short-lived) or catastrophic (low-frequency, long-lived) perturbations. The application of most existing models, either for state projections or as premonitory tools, is therefore severely limited.

This minisymposium will focus on theoretical and computational frameworks that integrate system dynamical models and empirical data, to provide information on current marine ecosystem state, and projections of its short- and long-term response to environmental change. We particularly encourage presentation of recent frameworks based on the use of (discrete or continuous time) Ordinary Differential (OD), Partial Differential (PD), and Delay Differential (DD) equations, and involve Individual-Based Modeling (IBM), spatial movement (ecology) simula- tions, and Dynamic Energy Budget (DEB) models. Because marine systems are complex and difficult to observe, comprehensive monitoring programs for entire systems are necessarily limited. We therefore encourage papers that deal with metamodels and innovative approaches for model integration for marine ecosystems.

Utlysninger

FRIDTJOF NANSENS FOND TIL VITENSKAPENS FREMME OG DE DERMED FORBUNDNE FOND SØKER STIPENDMOTTAKERE.

Nansenfondenes formål er å fremme vitenskapelig forskning innen ulike fagområder. I samsvar med de enkelte fonds statutter kan det tildeles midler til blant annet drift, forskningsutstyr, faglige reiser og vitenskapelig assistanse. Innen realfag og medisin prioriteres vanligvis støtte til drift og mindre utstyrsenheter. Bidrag gis etter søknad. Man kan søke om inntil 50 000 kroner.

Det forutsettes at prosjektleder eller veileder søker for sin forskningsgruppe. Bare unntaksvis vil søknader fra masterstudenter og stipendiater bli tilgodesett.

Det kan søkes fra 1. desember 2019 til søknadsfrist 15. januar 2019.

https://unifor.no/stiftelser/

Søknader sorteres etter følgende fagområder: realfag og medisin (herunder odontologi og veterinærmedisin) og humaniora og samfunnsfag (herunder jus og teologi). Det er opprettet eget søknadsskjema for hvert fagområde.

Vennligst les utlysningsteksten og vedtekter nøye, samt veiledning og søknadsprosedyren

som følger på søknadsskjemaet. Det aksepteres kun søknader innsendt via UNIFORs søknadsportal. UNIFOR er tilgjengelig for spørsmål og veiledning i kontortid gjennom hele søknadsperioden.

Det må fylles inn hvilket fagområde man hører inn under i søknadsskjemaet. Mottagere av bidrag fra Nansenfondet og de dermed forbundne fond vil bli avkrevd årlig rapport, og gjentatte tildelinger vil være avhengige av tilfredsstillende rapportering.

FRIDTJOF NANSENS BELØNNING FOR YNGRE FORSKERE 2019
Utlysning med frist 10. februar

Fridtjof Nansens belønning for yngre forskere er todelt; én i humaniora og samfunnsfag og én i realfag og medisin. Hver av belønningene er på 75 000 kroner og ett diplom.

Belønningen tildeles norske forskere eller forskere fast bosatt i Norge, som ennå ikke har fylt 40 år. For øvrig gjelder samme regler som for Fridtjof Nansens belønning for fremragende forskning.

Spørsmål kan rettes til styresekretær;

Line Therese Nævestad

Tlf.: 22 84 15 04 eller e-post: l.t.navestad@dnva. no.

CALL FOR NOMINATIONS OF CANDIDATES FOR TEN EMS PRIZES PRINCIPAL GUIDELINES

Any European mathematician who has not reached his/her 35th birthday on July 5, 2020, and who has not previously received the prize, is eligible for an EMS Prize at 8ecm. Up to ten prizes will be awarded. The maximum age may be increased by up to three years in the case of an individual with a broken career pattern. Mathematicians are defined to be European if they are of European nationality or their normal place of work is within Europe. Europe is defined to be the union of any country or part of a country which is geographically within Europe or that has a corporate member of the EMS based in that country. Prizes are to be awarded for work accepted for publication before October 31, 2019.

The Prize Committee is responsible for the evaluation of nominations. Nomi- nations can be made by anyone, including members of the Prize Committee but only before the deadline; the Prize Committee chair will reveal the list to the committee only after the nominations are closed. It is the responsibility of the nominator to provide all relevant information to the Prize Committee, including a résumé and documentation. The nomination for each award must be accompanied by a written justification and a citation of about 100 words that can be read at the award ceremony. The prizes cannot be shared.

The award comprises a certificate including the citation and a cash prize of 5000 e.

The prizes will be presented at the Eighth European Congress of Mathematics in Portorož, July 5-11, 2020, by the President of the European Mathematical Society. The recipients will be invited to present their work at the congress.

HIRZEBRUCH LECTURE: CALL FOR NOMINATIONS

To honour the memory of Professor Friedrich Hirzebruch, an outstanding German mathematician and the first President of the European Mathematical Society, the DMV and the EMS have jointly agreed to establish a "Hirzebruch Lecture" given as a part of the European Congresses of Mathematics, beginning with the 7th ECM in Berlin in 2016. The lecture is supported by both the societies.

The lecturer should be an internationally renowned mathematician who, in addition, has contributed significantly to international, in particular also European, cooperation in mathematics.

The selection of the lecturer will be made by a committee jointly nominated by the DMV and the EMS.

Nominations should be addressed to the EMS office at the following address, not later than December 31, 2019: EMS Secretariat, Ms. Elvira Hyvönen.

E-mail: ems-office@helsinki.fi

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CALL FOR NOMINATIONS OF CANDIDATES FOR THE OTTO NEUGEBAUER PRIZE FOR THE HISTORY OF MATHEMATICS

The Prize is to be awarded for highly original and influential work in the field of history of mathematics that enhances our understanding of either the development of mathematics or a particular mathematical subject in any period and in any geographical region. The prize may be shared by two or more researchers if the work justifying it is the fruit of collaboration between them. For the purposes of the prize, history of mathematics is to be understood in a very broad sense. It reaches from the study of mathematics in ancient civilisations to the development of modern branches of mathematical research, and it embraces mathematics wherever it has been studied in the world. In terms of the Mathematics Subject Classification it covers the whole spectrum of item 01Axx (History of mathematics and mathematicians). Similarly, there are no geographical restrictions on the origin or place of work of the prize recipient. All methodological approaches to the subject are acceptable.

The right to nominate one or several laureates is open to anyone. Nominations are confidential; a nomination should not be made known to the nominee(s). Self-nominations are not acceptable. It is the responsibility of the nominator to provide all relevant information to the Prize Committee, including a CV and a description of the candidate's work motivating the nomination, together with names of specialists who may be contacted.

The award comprises a certificate including the citation and a cash prize of 5000 e.

The prizes will be presented at the Eighth European Congress of Mathematics in Portorož, July 5-11, 2020, by the President of the European Mathematical Society. The recipients will be invited to present their work at the congress.

The money for the Prize Fund is offered by Springer Verlag.

Nominations for the prize should be addressed to the chairman of the Prize Committee, Professor Eberhard Knobloch (TU Berlin). The nomination letter must reach the EMS office at the address given below, not later than December 31, 2019:

EMS Secretariat, Ms. Elvira Hyvönen
E-mail: ems-office@helsinki.fi

CALL FOR NOMINATIONS OF CANDIDATES FOR THE FELIX KLEIN PRIZE

Nowadays, mathematics often plays the decisive role in finding solutions to nu- merous technical, economical and organizational problems. In order to encourage such solutions and to reward exceptional research in the area of applied mathe- matics the EMS decided, in October 1999, to establish the Felix Klein Prize. The mathematician Felix Klein (1849-1925) is generally acknowledged as a pioneer with regard to the close connection between mathematics and applications which lead to solutions to technical problems.

The Prize is to be awarded to a scientist, or a group of at most three scientists, under the age of 38 for using sophisticated methods to give an outstanding solution, which meets with the complete satisfaction of industry, to a concrete and difficult industrial problem.

The Prize Committee is responsible for solicitation and the evaluation of nominations. Nominations can be made by anyone, including members of the Prize Committee but only before the deadline; the Prize Committee chair will reveal the list to the committee only after the nominations are closed. It is the responsibility of the nominator to provide all relevant information to the Prize Committee, including a résumé and documentation of the benefit to industry and the mathematical method used. The nomination for the award must be accompanied by a written justification and a citation of about 100 words that can be read at the award date. The prize is awarded to a single person or to a small group and cannot be split.

The award comprises a certificate including the citation and a cash prize of 5000 e.

The Prize will be presented at the Eighth European Congress of Mathematics in Portorož, July 5-11, 2020, by a representative of the endowing Fraunhofer Institute for Industrial Mathematics in Kaiserslautern and/or by the President of the European Mathematical Society. The recipient will be invited to present his or her work at the congress.

The money for the Prize fund is offered by the Fraunhofer Institute for Industrial Mathematics in Kaiserslautern.

Nominations for the prize should be addressed to the chairman of the Prize Committee, Professor Ralf Korn (TU Kaiserslautern). The nomination letter must reach the EMS office at the following address, not later than December 31, 2019:

EMS Secretariat, Ms. Elvira Hyvönen
E-mail: ems-office@helsinki.fi
Prize Committee Chair Address
Prof. Ralf Korn, TU Kaiserslautern,
E-mail: korn@mathematik.uni-kl.de

CALLING OUTSTANDING YOUNG RESEARCHERS IN MATHEMATICS AND COMPUTER SCIENCE!

The application process for the 7th Heidelberg Laureate Forum has begun.

Young researchers in computer science and mathematics from all over the world can apply for one of the 200 coveted spots to participate in the Heidelberg Laureate Forum (HLF), an annual networking event. The HLF offers all accepted young researchers the great opportunity to personally interact with the laureates of the most prestigious prizes in the fields of mathematics and computer science. For one week, the recipients of the Abel Prize, the ACM A.M. Turing Award, the ACM Prize in Computing, the Fields Medal, and the Nevanlinna Prize engage in a cross-generational scientific dialogue with young researchers in Heidelberg, Germany.

The application period for the 7th HLF runs from November 15, 2018, until February 15, 2019. Young researchers at all phases of their careers (undergraduate/pre-master, graduate PhD or postdoc) are encouraged to complete and submit their applications by February 15 (midnight at the dateline) via the following link: http://application.heidelberg-laureate-forum.org

The 7th HLF will take place from September 22 to 27, 2019 (with young researcher registration on September 21). This prominent, versatile event combines scientific, social and outreach activities in a unique atmosphere, fueled by comprehensive exchange and scientific inspiration. Laureate lectures, young researcher workshops and a structure welcoming unfettered discussions are the elements that compose the Forum's platform.

Over the course of the weeklong conference, young researchers will be given the exclusive possibility to profoundly connect with their scientific role models and find out how the laureates made it to the top of their fields. As described by a young researcher, "It's a life-changing experience. Getting the opportunity to actually speak to the laureates in close contact can really shape us."

All applications that are completed and submitted by the deadline are meticulously reviewed by an international committee of experts to ensure that only the most qualified candidates are invited. There are 100 spaces available for each discipline of mathematics and computer science. All applicants will be notified by the end of April 2019 whether or not they will be invited.

For questions regarding requirements and the application process, please contact Young Researchers Relations at: yr@heidelberg-laureate-forum.org

For more information, please visit:
www.heidelberg-laureate-forum.org

The Heidelberg Laureate Forum Foundation (HLFF) annually organizes the Heidelberg Laureate Forum (HLF), which is a networking event for mathematicians and computer scientists from all over the world. The 7th Heidelberg Laureate Forum will take place from September 22 to 27, 2019. The HLFF was established and is funded by the German foundation the Klaus Tschira Stiftung (KTS), which promotes natural sciences, mathematics and computer science. The Scientific Partners of the HLFF are the Heidelberg Institute for Theoretical Studies (HITS) and Heidelberg University. The HLF is strongly supported

by the award-granting institutions, the Association for Computing Machinery (ACM), the International-al Mathematical Union (IMU), and the Norwegian Academy of Science and Letters (DNVA).

EUROPEAN CONGRESS OF MATHEMATICS CALL FOR BIDS FOR THE 9ECM

Outline bids from mathematicians to organize the 2024 Congress are now invited, and should reach the EMS Secretariat by 28 February 2019. The address of the Secretariat is Department of Mathematics & Statistics, P.O. Box 68 (Gustaf Hällströmink. 2b, 00014 University Helsinki, Finland) (Phone: +358 9 1915 1507 Fax: +358 9 1915 1400; Email: ems-office@helsinki.fi).

The information below may be helpful to possible organizers. Informal discussions are welcomed, and may be addressed to the President of the EMS.

European Congresses of Mathematics are organized every four years. The first Congress was held in Paris in 1992, and since then they have been held in Budapest, Barcelona, Stockholm, Amsterdam, Krakow, and Berlin. In 2020 the Congress will take place in Portorož (Slovenia).

Experience of previous Congresses suggests that around a thousand or more people may attend. The duration has so far been five days. Ten EMS Prizes are awarded to outstanding young European mathematicians at the opening ceremony, together with the Felix Klein and Neugebauer Prizes. The Congress programme should aim to present various new aspects of pure and applied mathematics to a wide audience, to offer a forum for discussion of the relationship between mathematics and society in Europe, and to enhance cooperation among mathematicians from all European countries. The standard format of previous ECMs has been:
- about 10 plenary lectures;
- section lectures for a more specialized audience, normally with several held simultaneously;
- mini-symposia;
- film and mathematical software sessions;
- poster sessions;
- round tables.
An exhibition space for mathematical societies,

booksellers, and so on is required. No official language is specified and no interpretation is needed. Proceedings of the Congress are published by EMS Publishing House (http://www.ems-ph.org/).

(i) Bids are invited via this notice in the EMS Newsletter, and via letters to the EMS member societies; the deadline for bids is 28 February 2019. These bids need only be outline bids giving a clear idea of the proposal and possible sources of financial and local support.

(ii) The Executive Committee of the EMS will consider the bids received. It will invite one or more of the bids to be set out in greater detail so that it can decide which bids are sufficiently serious options to be considered further. The deadline for such "worked up" bids, which will include a draft budget and a commitment to follow the conditions set up by the Executive Committee, is 31 July 2019.

(iii) The EC will then create a short-list of sites that appear to offer the best possibilities for a successful Congress, and appoint a Site Committee to visit the short-listed sites between September and December 2019 to check a range of items in connection with the development of the Congress. For example:
- Size and number of auditoria; location and equipment
- Room for exhibitors
- Hotel rooms and dormitories; location, prices, number in different categories and transportation to lectures
- Restaurants close to Congress site, number and prices
- Accessibility and cost of travel from various parts of Europe
- Financing of the Congress; support to participants from less favoured countries, in particular
- Financing for the EMS Prizes
- Experience in organizing large conferences
- Timing of the Congress
- Social events
- Plans to use the occasion of the Congress as publicity for mathematics
- The EC may or may not make a recommendation to the Council based on the report of
the Site Committee; the choice is at the discretion

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of the Council delegates.

(iv) In 2020, at the EMS Council held at Bled prior to 8ECM, a decision will be reached.

Relations between the EC and the Organizing Committee of 9ECM

The actual Congress organization is the responsibility of the local organizers, the EMS coordinates setting of the scientific programme. Two main committees are appointed: the Scientific Committee and the Prize Committee.

The Scientific Committee is charged with the responsibility for conceiving the scientific programme and selecting the speakers. The Prize Committee is charged with the responsibility of nominating the EMS Prize winners. For each of these committees the Chairs are appointed by the EC. There will be a call for suggestions of members of these two committees from the EMS member societies, after which the membership of each committee will be decided by the EC, in consultation with its Chair. In addition, the Executive Committee will appoint the Otto Neugebauer Prize Committee, the Hirzebruch lecture committee (together with DMV), and the Felix Klein Prize Committee, the latter in co-operation with ECMI and the Fraunhofer Institute for Industrial Mathematics in Kaiserslautern. The Executive Committee wil also select the Abel Prize lecturer.

The EC must be kept informed by the Chair of each committee about the progress of their work.

The local organizers are responsible for seeking financial support for the Congress and for the meetings of its committees. However, the EMS will provide some financial support for mathematicians from less favoured countries in Europe, and will also assist and advise in seeking sources of funding.

The level of the registration fee is of great importance to the success of an ECM, and the EC must be involved before a final decision on the level of fees is made; members of the EMS normally receive a reduction of some 20% on the registration fees. The EC would be pleased to offer advice to the local organizers on matters such as the budget, registration, accommodation, publications, web site, and so on, but in any case the EC must be kept informed of progress at its regular meetings. Publicity for the ECM via the EMS Newsletter and the EMS site http://www.euro-math-soc.eu/ should appear regularly.

Pavel Exner and Sjoerd Verduyn Lunel

HOLMBOE-PRISEN 2019

Kjenner du en matematikklærer som fortjener en pris? Noen som både brenner for sitt fag og greier å formidle det til sine elever? Noen som har gitt et løft for matematikkfaget og som fortjener større oppmerksomhet for det?

Norsk matematikkråd deler hver vår ut Bernt Michael Holmboes minnepris. Holmboeprisen kan gis til en eller flere matematikklærere i norsk grunnskole eller videregående skole. Prisen, som er finansiert av Abelfondet, er på kr 100 000 og skal deles mellom prisvinneren og skolen han eller hun kommer fra. Vi ønsker på denne måten å løfte frem gode matematikklærere som forbilder for alle som arbeider med undervisning. Utfordringen i matematikkfaget i dag er å skape et godt grunnlag av kunnskaper å bygge videre på, samtidig som elevene må føle at det de lærer er relevant og angår dem. De lærerne som greier dette har fått til noe som også andre bør få ta del i og lære av.

Alle som vil kan nominere kandidater til Holmboeprisen. Det kan være nåværende eller tidligere elever, foreldre til elever eller kollegaer som vil rette oppmerksomhet mot en matematikklærer som har gjort en innsats utover det vanlige. Legg ved en begrunnelse for hvorfor du mener at din kandidat bør få prisen, og navn på to referansepersoner som vi kan kontakte for å få ytterligere informasjon. Det er mulig å nominere en enkelt lærer eller en gruppe lærere som sammen har gjort en innsats for matematikkfaget. De nominerte bør fremdeles være aktive som lærere.

Frist: 15. januar 2019.

Nominerinsskjema:
https://holmboeprisen.no/nominasjon/

MATEMATISK ORDLISTE

Det er nå opprettet en matematisk ordliste på Matematikkrådets sider *matematikkradet.no/ordliste* som et hjelpemiddel slik at både studenter og faglig ansatte lettere kan kommunisere om matematikk på norsk. Prosjektet er et samarbeid mellom NTNU, UiO og UiA og har mottatt støtte fra Språkrådet.