Newsletter

BELGIAN MATHEMATICAL
SOCIETY

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Comité National de Mathématique   CNM

C $\underset{N}{W}$ M

NCW   Nationaal Comité voor Wiskunde

**Newsletter of the Belgian Mathematical Society
and the National Committee for Mathematics**

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Contents

The next edition of this newsletter will appear on May 15th, so from now till May 7th all content can be sent to wendy.goemans@kuleuven.be. Any information that you qualify as interesting to be spread among the Belgian Maths community is very much welcomed!

Foreword

Dear BMS members,

The Belgian Mathematical Society was created on 14 march 1921. It is now one hundred years old. Over the last century, the world has changed, generations have come and gone, and, for better or for worse, Scientific Progress has given humanity near total control of our earth and all lifeforms that inhabit it (save perhaps for viruses . . .).

One of the keys to our species' "victory" over the animal and natural kingdoms, is the unreasonable effectiveness of mathematical discoveries, moreover when coupled with the incredible computational power of modern computers. Mathematical literacy has become a crucial ingredient for successful navigation of an increasingly ruthless economic world. It is our duty, as professional and amateur mathematicians, to make the queen of science's beauty, joy and importance as widely accessible as possible; and perhaps also help teach those who need to learn it that beauty does not only lie in accumulation of wealth and power, but can also be found in the accumulation of wisdom and friendships.

On the cover of this issue, we have printed the first 101 digits of π; 101 because it is not possible for us to honor the society's century of contributors with adequate pomp and circumstance. We therefore will wait one year, and throw the society the party it deserves to celebrate its 101th birthday.

Until then, stay safe, take care of yourselves, of your loved ones, and make the world a kinder place.

Happy pi-birthday, BMS!

Philippe, Wendy and Yvik

1 News from the BMS & NCM

1.1 Bulletin of the Belgian Mathematical Society - Simon Stevin

Starting from Volume 28 the Bulletin of the Belgian Mathematical Society - Simon Stevin only appears online and is not printed anymore. As a member of the BMS you can ask for electronic access to all electronically available issues of the bulletin. If you don't have a login yet, contact pcara@vub.ac.be. For the table of contents of previous issues, see https://projecteuclid.org/all/euclid.bbms.

2 Announcements

2.1 Francqui chair 2021 at ULB: Michel Van den Bergh

Michel Van den Bergh is this year's Francqui chair at ULB. See also the announcement of the inaugural lecture and a series of lectures in Section 3.4.

2.2   Francqui chair 2021 at VUB: Leo Storme

Leo Storme will take up the Francqui Chair at the Department of Mathematics and Data Science (WIDS), research group Digital Mathematics (DIMA), VUB. See also the announcement of the inaugural lecture and a series of lectures in Section 3.4.

2.3   Fellow of Institute of Mathematics and its Applications

Professor Mohammad Sajid recently became Fellow of Institute of Mathematics and its Applications.

Congratulations!

3   (Online) Meetings, Conferences, Lectures, . . .

3.1   March 2021

Pi Day "virtuel"

March 8-12, 2021 (ULiège)

A virtuel π-day took place this week, all information is available on

https://www.mathematics.uliege.be/cms/c_6819721/fr/pi-day-2021.

3.2   April 2021

Mathematics Research Day goes virtual

April 21, 2021 (University of Antwerp)

We invite you to the second edition of the Mathematics Research Day of the University of Antwerp. In this event, young researchers of the Department of Mathematics will introduce their field of study. Besides that, other aspects of a research career in mathematics will be discussed. The event is targeted at students, fellow researchers and teachers and will take place on the afternoon of Wednesday, April 21st, 2021 online via Blackboard. Participation is free, but registration is mandatory.

The program consists of a number of talks and pitch presentations about research done at the department. Afterwards we will talk about mathematical research done in the industry and about the obstacles that women sometimes have to face in science. The presentations will be held on the level of knowledge of our bachelor students. There will be a virtual coffee break and virtual reception organized using the software 'Gather'. This provides participants with an online space where they can 'walk' and meet each other in smaller groups.

More details can be found on the webpage of the event:

https://www.uantwerpen.be/en/departments/mathematics/research/mathematics-research-day/

3.3   May 2021

PDE, Analysis and Applications:

Conference in Honour of the 60th Birthday of Serge Nicaise

May 3-6, 2021 (Valenciennes)

This conference is in honor of Serge Nicaise 60th birthday. After making his studies and his thesis in Mons, Serge went to France where he became an internationally renowned researcher in the field of partial differential equations with more than 300 peer-reviewed papers totalling more than 3000 citations. He also has directed 27 Ph.D. theses. Serge is also a driving force behind the development of mathematics at Université Polytechnique Hauts de France (formerly Université de Valenciennes et du Hainaut-Cambrésis) and maintains his contacts with Belgium colleagues. The invited speakers coming from 10 countries (see announcement at the end of this newsletter) will cover a broad range of Serge's interests. Further information is available on the poster at the end of this newsletter and on the website https://nicaise2021.sciencesconf.org/.

Miniworkshop on symplectic and contact dynamics

May 12, 2021 (UAntwerpen)

This online miniworkshop consists of 3-4 talks on recent results in symplectic and contact dynamics. All information can be found online

https://www.uantwerpen.be/nl/personeel/sonja-hohloch/private-webpage/conference-workshop/miniworkshop-symp-contact/

3.4   Seminars and colloquia

Ghent Methusalem Junior Seminar

The Ghent Methusalem Junior Analysis & PDE Seminar is run by PhD students and postdocs at the Ghent Analysis & PDE Center. It provides an opportunity for young researchers in various areas of analysis and PDEs to share their ideas and to learn new exciting things related to the topics of Analysis & PDEs as well as broader mathematical subjects.

The seminar currently takes place on ZOOM. For titles and all information, see:

https://analysis-pde.org/ghent-methusalem-junior-seminar/

It is a great opportunity to learn new things in an informal atmosphere, and to find new ideas and possible collaborations.

If you would like to give a talk, or to invite someone to give a talk, please contact:

- Duvan Cardona Sanchez (Duvan.CardonaSanchez@UGent.be)
- Serena Federico (Serena.Federico@UGent.be)
- Vishvesh Kumar (Kumar.Vishvesh@UGent.be)
- David Rottensteiner (David.Rottensteiner@UGent.be)
- Bolys Sabitbek (b.sabitbek@qmul.ac.uk).

Scheduled talks are:

- 9 March 2021, Effie Papageorgiou (University of Crete, Greece).
- 16 March 2021, Louise Gassot (Université Paris-Sud, France).
- 23 March 2021, Liliana Esquivel (Gran Sasso Science Institute, Italy and Universidad de Pamplona, Colombia).
- 30 March 2021, Adilbek Kairzhan (University of Toronto, Canada).
- 6 April 2021, Prashanta Garain (Ben-Gurion University of the Negev, Israel).
- 13 April 2021, Marcello Malagutti (University of Bologna, Italy).
- 20 April 2021, Pritam Ganguly (Indian Institute of Science Bangalore, India).
- 27 April 2021, Lorenzo Ruffoni (Florida State University, Florida).
- 4 May 2021, Cesar Ceballos (Institute of Geometry, TU Graz, Austria).
- 11 May 2021, Andrea Vanessa Hurtado (Université de Bourgogne, Dijon, France).
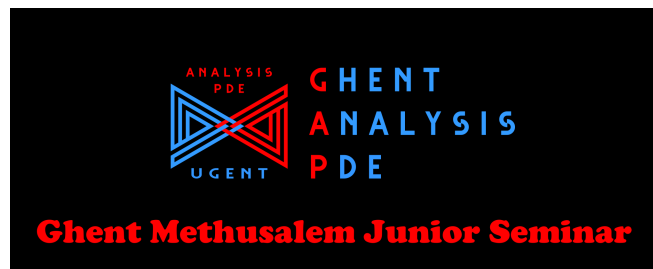
Analysis & Geometry Seminar (UAntwerpen)

Online on Wednesdays 16.00 - 17.00

For scheduled talks and all information, see

https://www.uantwerpen.be/nl/personeel/sonja-hohloch/private-webpage/seminars/analysis—geometry-/

Methusalem colloquium talks (KU Leuven)

Scheduled talks (for the link please contact grzegorz.swiderski@kuleuven.be):

- **25th March** on 16:15-17:15 Speaker: **Feng Hao** (KU Leuven)
  Title: Holomorphic 1-forms and geometry of algebraic varieties
  Abstract: In principle, holomorphic 1-forms on a smooth complex projective variety X encode much information of topology and geometry of X. In this talk, I will first give a survey on how the zeros of holomorphic 1-forms affect the birational property and topology of smooth projective varieties. Also, I will discuss a recent work (joint with Yajnaseni Dutta and Yongqiang Liu) on how the existence of nowhere vanishing holomorphic 1-forms on a smooth complex projective variety X affect the singularities of morphisms from X to (simple) abelian varieties. Also, I will discuss some results on the linearity of the set of holomorphic 1-forms admitting zeros, which is related to the study of singularities of Albanese map.
- **29th April** on 16:15-17:15 Speaker: **Grzegorz Świderski** (KU Leuven) Title: Spectral properies of Jacobi matrices
  Abstract: Jacobi matrices are symmetric tridiagonal matrices acting on the space of square-summable sequences. They constitute an important subclass of self-adjoint operators as it can be shown that any self-adjoint operator is a direct sum of Jacobi matrices. They can be found in various disguises in diverse fields. In particular, in probability theory (random walks, birth-death processes), orthogonal polynomials theory, mathematical physics (discrete Schödinger operators), differential equations (J-matrix method). In the talk I shall concentrate on examples leading to Jacobi matrices.
  This colloquium will be followed by a mini course in which I shall present basic techniques of the spectal analysis of Jacobi matrices.

More information on https://wis.kuleuven.be/methusalem-pure-math/colloquia_seminars_lectures.

Francqui chair at ULB 2021: Michel Van den Bergh

Michel Van den Bergh is this year's Francqui chair at ULB. On March 31 there will be an inaugural lecture, and later there will be a series of lectures, on Introduction to Homological mirror symmetry. All information can be found on the website: https://sciences.ulb.be/la-recherche/francqui-chair-2021. See also the poster at the end of this newsletter.

Francqui chair at VUB 2021: Leo Storme

Leo Storme will take up the Francqui Chair at the Department of Mathematics and Data Science (WIDS), research group Digital Mathematics (DIMA), VUB.

On April 19 there will be an inaugural lecture titled "Finite geometry: pure mathematics close to practical applications". The inaugural lecture will be followed by a series of course lectures taking place in April and May 2021.

All dates and information can be found on the websites: http://www.francquifoundation.be/19-04-2021-inaugural-lecture-online-leo-storme/ and https://we.vub.ac.be/en/inaugural-lecture-francqui-chair-prof-dr-leo-storme.

4 Job announcements

4.1 From UGent

Doctoraatsbursaal

Diploma: master of science in de wiskunde of vergelijkbaar (of bachelor gelijkwaardig door ervaring)

Functieomschrijving:

De doctoraatsbursaal zal werken aan de Universiteit van Gent, in de Odysseus/Methusalem-groep "Analyse en partiële differentiaalvergelijkingen" en zal onder supervisie staan van Professor Michael Ruzhansky. Het onderzoek waaraan hij/zij werkt zal zich wijden aan een thema binnen analyse en gerelateerd zijn aan partiële differentiaalvergelijkingen. Dit onderwerp zal worden vastgelegd op basis van de achtergrond van de kandidaat. Een masteropleiding waarvan gevorderde cursussen in analyse en partiële differentiaalvergelijkingen deel uitmaakten, is zeer wenselijk. Meer informatie over mogelijke onderzoeksthema's is te vinden op de website van de groep: https://analysis-pde.org/

Geïnteresseerde kandidaten kunnen hun aanvraag sturen naar mevrouw Verbeeck Kim via

kimpj.verbeeck@ugent.be.

De aanvraag dient onderstaande documenten te bevatten:

- Motivatiebrief
- Volledig CV
- Naam en e-mailadres van twee of drie referenties
- Transcriptie van bachelor- en mastercijfers
- Masterdiploma

Kandidaten die dit jaar afstuderen, kunnen reeds solliciteren en hun masterdiploma later bezorgen.

4.2 From Université de Mons

Ouverture d'une charge de cours - Probabilités ou Processus stochastiques

See the document at the end of this newsletter for all the information.

5 History, maths and art, fiction, jokes, quotations . . .

5.1 To celebrate π-day . . .

. . . Paul Levrie presents an interesting collection of π-trivia on the next page. Thank you Paul!

5.2 Adhemar's corner

Next follow also two interesting book reviews. Thank you Adhemar!

pi trivia

Did you know that ...

- ... today is π-day?
  Why? Because in America they write 3/14 for the date of today, March 14, and 3.14 is an approximation to the number π.
  Today you should eat pie, as everyone does. Or you should buy some pie for someone!

- ... since 26 November 2019 thanks to Unesco:

INTERNATIONAL **DAY** OF **MATHEMATICS** MARCH **14**

- ... the number π is a mathematical constant that is the ratio between the circumference of a circle and its diameter? The first 500 decimal digits of π are given by:

  3.14159265358979323846264338327950288419716939937510582097494459230781640628620899862803482534211706798214808651328230664709384460955058223172535940812848111745028410270193852110555964462294895493038196442881097566593344612847564823378678316527120190914564856692346034861045432664821339360726024914127372458700660631558817488152092096282925409171536436789259036001133053054882046652138414695194151160943305727036575959195309218611738193261179310511854807446237996274956735188575272489122793818301194913

  Note that there is no regularity at all in the decimals of the number π, so calculating many decimals of π is not obvious. Fortunately, there are algorithms that allow you to calculate (a number of decimals of) π relatively quickly.

- ... the world record of memorization of digits of π has been in the hands of the Indian Suresh Kumar Sharma (now 24 years old) since 2015, with 70030 digits?

- ... on January 29, 2020, Timothy Mullican ended his calculation (and verification – not by hand;-) of the first 50 trillion digits of π. Calculation time: 303 days. This stands as a new record.

- ... the largest number of digits of π that you will ever need is 42, at least for computing circumferences of circles? If you want to compute the circumference of the known universe with an error less than the diameter of a proton, you need 42 digits of π (assuming that the diameter of the known universe is 93 billion light years and that the diameter of a proton is 1.6×10^{-15} meters...).
  These digits are underlined in the previous column. You might consider memorizing these.
  Note that this is expecially nice for the fans of Douglas Adams: They know that 42 is the answer to everything...
  Also note that this doesn't at all justify statements like this one:
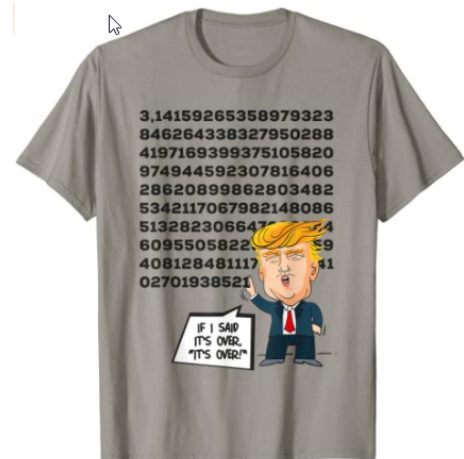
- ... recently, in 2020, a new planet was discovered which is called π Earth, a planet approximately the size of Earth, that orbits around its star every 3.14 days? Researchers discovered signals of the planet in data taken in 2017 by the NASA Kepler Space Telescopes K2 mission. By zeroing in on the system with SPECULOOS, an acronym for The Search for habitable Planets EClipsing ULtra-cOOl Stars, a network of ground-based telescopes, the team of researchers confirmed that the signals were of a planet orbiting its star. This is reported in a paper in the Astronomical Journal entitled: *π Earth: a 3.14-day Earth-sized Planet from K2s Kitchen Served Warm by the SPECULOOS Team.*

- ... π appears regularly as a theme in sudokus? Here's one for you to solve:

			4	3.	1			
		8				4		
	3						1	
2								5
3				6				9
9								2
	7						6	
		9				5		
			8	5	3			

There's one extra rule: A digit can not be placed in a cell which is within a king's move (in chess) of a cell containing that same digit (or, diagonally adjacent cells cannot contain the same number).
(Source: Aad van de Wetering. Thank you, Stijn!)

- ... there are many beautiful formulas for π? Note that there were none before Vieta found his product formula, but from then on many very nice ones have been found. Here are some artsy continued fractions for π:

$$\frac{4}{\pi} = 1 + \cfrac{1^2}{2 + \cfrac{3^2}{2 + \cfrac{5^2}{2 + \cfrac{7^2}{2 + \ddots}}}}$$

$$\frac{\pi}{4} = \cfrac{1}{1 + \cfrac{1^2}{3 + \cfrac{2^2}{5 + \cfrac{3^2}{7 + \cfrac{4^2}{9 + \ddots}}}}}$$

$$\frac{\pi}{2} = 1 + \cfrac{1}{1 + \cfrac{1}{\frac{1}{2} + \cfrac{1}{\frac{1}{3} + \cfrac{1}{\frac{1}{4} + \ddots}}}}$$

due to Lord Brouncker, Euler and Euler.

- ... it was shown in the 19th century that squaring the circle (= constructing the number π using only a ruler and a compass) is impossible, but that before that time there were many people who tried it?
Adriaan Van Roomen (1561-1615), professor in Leuven, probably knew that. At the end of his book *Apologia pro Archimede*, there's the following epigram:

> Aucuns se laissent deceuoir
> Pensant d'vne raison peu seure,
> Auoir descouuert & fait voir
> Du cercle ou du rond la Quarreure
> Adrian donc par ces escrits,
> Escrits dignes d'vn Archimede,
> Esclaircissant mieux nos esprits,
> Nous monstre ici leur erreur laide.

- ... π might also be found in the Design Museum in Ghent? This is their logo:

(Thanks, Hilde!)

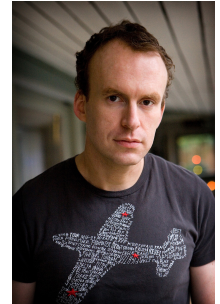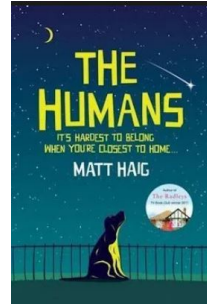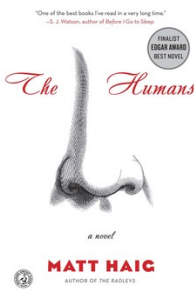- ... 'pi' is essential for happiness?

(Thank you, Rudi!)

- ... the number π appears in unexpected places? This seems to me to be a very nice present for π-day:

Why not πr^2, you might ask? Well, that's an easy one: 'Pie are squared' is not true, pie are round.

The Humans, *Matt Haig*, Simon & Schuster, 2013 (320 p.) isbn: 978-1-4767-3059-2 (pbk) .

This is a science fiction story, not only because the start of the plot is that some mathematician Andrew Martin solves the Riemann Hypothesis, and therefore reached the very edge of knowledge. The Vonnadorians, a very advanced civilisation unimaginably far removed from our galaxy learned about this fact and they immediately took his life and sent a clone whose assignment is to eliminate every trace of the fact that there has been a breakthrough towards the solution of the Riemann Hypothesis.

The 43 year old replacement of Andrew Martin is aware of what was in the original one's brain, but he is a completely newborn on earth, not knowing how to behave or to understand the completely illogical behaviour of humans. So he walks around not wearing any clothes, wondering why other people are staring at him, and why they feel comfortable in covering their skin. Spitting at people as a sign of friendly greeting does not help much to socialise.

He of course is picked up by the police when he walks into Corpus Cristi (Cambridge University) and is put in a mental hospital to be treated for a breakdown. He has the human appearance, but has all the powers of a Vonnadorian: they can heal all their wounds, and wounds of others, except death, that is really fatal. But being undercover, he cannot disclose any of this.

After he leaves the hospital, he lives with his wife (Isobel), a teenage son (Gulliver), and a dog (Newton). The real Andrew was all but a loving husband and father, only interested in mathematics and his career, having an affair with a student on the side. The replacement, who is supposed to find out anyone who knew about the Riemann Hypothesis and kill them. Vonnadorians have no emotions, so that should be easy. He finds out that Isobel (a historian, and author) does not seem to be aware of anything and the son, has his own problems, just hates his father, and is not at all interested in his work. But there are others.

Another problem that the new Andrew has is food. He detests almost everything the humans eat, especially meat (why eat beef but not a cow?), and the only thing he seems to be able to swallow is a sandwich with peanut butter (also liked by Newton). And he does not know about loving or sex. All he knows about this subject, he knows from reading the *Cosmopolitan* magazine. He has to learn all the facial expressions of humans, and that what they say is not always what they mean. Many things are left unspoken, and what they ask has often an obvious answer.

While he is still in contact with his Vonnadorian superiors, who urge him to "clean up" everything, he becomes more and more human, appreciating the emotions that humans seem to have, the poems of Emily Dickinson, and music. This leads to some emotional and romantic scenes, both with his son and his wife. His superiors seem to loose grip on him, he is cut off from his powers (all the powers reside in the left hand), and a replacement is sent to finish the job. There is actually some suspense at this point, since instead of eliminating them, he is defending the ones he is now appreciating.

Thus the story becomes very much like a *The Little Mermaid* story with some twist at the end, that I will not spoil. There is of course some explanation about the Riemann hypothesis, and even a formula $\xi(1/1 + it) = [e^{R \log(r(s/2))}\pi^{-1/4}(-t^2 - 1/4)/2] \times [e^{ij \log(r(s/2))}\pi^{-it/2}\zeta(1/2 + it)]$ (no explanation given), and there is some reference to prime numbers, Giorgi Perelman, and Fermi paradox, but little reference to other mathematics. An engaging read: funny, romantic, thrilling, sometimes violent, and putting many things into perspective.   Adhemar Bultheel

The Math behind the Magic, *Ehrhard Behrends*, AMS, 2019 (xx +208 p.) isbn: 978-1-4704-4866-0 (pbk).

The AMS published under this title a translation of Behrends' *Der mathematische Zauberstab* (Rowohlt Taschenbuch, 2015). Behrends explains many number tricks that can be obtained, based on mathematical rules. Most of them are hidden into card tricks. It is known that many mathematicians are fond of games and magic. If you catch the attention of a youngster with magic and you want to sneak in some mathematics, then this book can be of great help for you.

Ehrhard Behrends

There are several ways to use mathematics. Of course there are the mathematical properties of integers that can be used (chapter 1), also combinatorial and modulo calculus (chapter 2), some coding strategies (chapter 3), or just probability (chapter 4). Mostly the scenario is to explain the trick, how to prepare the cards (if needed) and then the explanation of why it works. Usually there are some variations or more complicated versions at the end. Let me give some examples.

It is not difficult to prove that a 4 digit number minus the number that is obtained by reversing the order of the digits, is a multiple of 9. So if you ask to reveal 3 of the 4 digits of the result (for example represented as cards), you can immediately say what the fourth is because the sum of the digits has to be 9. Other tricks can make use of prime numbers. Suppose p is prime and you have p cards, $K_0, \ldots, K_{p-1}$. If one cyclically reveals every mth card ($1 < m < p$) then the last card to be uncovered will be K_0.

From chapter 2, we recall the fact that if you have n pairs of cards (like two cards of the same colour and the same value) and you stack the $2n$ cards separating the elements of the pairs n places apart, then you can cut the stack of $2n$ cards as many times as you want, the pairs will remain n places apart. For several variants of Gilbreath tricks, one has to start from an arranged stack (for example red-black alternation) and one should master a riffle shuffle (mix two piles alternating between both). Symmetry can also be used. Most card faces are upside-down symmetric,

riffle shuffle

but some are not (e.g. check 3,5,7,9). This can obviously be exploited in a trick.

In chapter 3, coding theory is used. Suppose you have 3 cards: A,B,C. Then there are 3! ways to order them, so that each ordering corresponds to a number from 1 to 6. With a deck of cards one can order by suits (for example ♥, ♦, ♣, ♠) and/or the values: $2, 3, \ldots, 9, 10, J, Q, K, A$. In this way the magician can hide a lot of information in the order of the cards that is unknown to the public. Or one could let the colours correspond to 0 and 1, so that cards laid out in some order represent a binary number. These are all ways in which an assistant can communicate with the magician.

The last chapter relies on probability, so the trick is not guaranteed to work, but the chance can be maximized. One is based on random walk. Just lay out a shuffled deck of cards face up in a row. Start near the beginning, read the value of the card, and move forward that number of cards and continue in that way till you reach the end. Provided there are enough cards, the chance is high that the end card, does not depend on the start card. Another trick relies on the non-transitive ordering of scissors-paper-rock. There is a winning strategy with high probability. Disguised as a card game you can have, with 3 cards, 8 different colour combinations. If the participant chooses e.g. RBB, then the magician inverts one of the colours that appeared twice and keeps the other. Thus he chooses RRB. The cards form the stack are turned one by one. It the stack is finished, it is shuffled and one continues with the shuffled tack. The one whose sequence of colours appears wins a point. The first one who wins five points wins the game. The strategy of the magician always has a greater chance of winning.

There are many more tricks that can be explored than the very brief sample that is given above. They are all great fun to perform and to explore the mathematics that is behind. Adhemar Bultheel
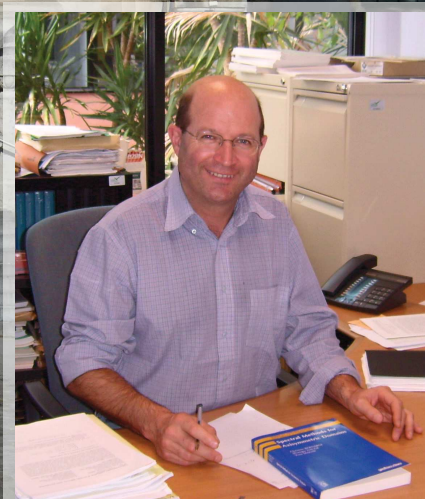
PDE, Analysis and Applications:
Conference in Honour of the 60th Birthday of Serge Nicaise
3 – 6 May 2021
UPHF, Campus du Mont-Houy, Valenciennes, France

Speakers

Kaïs Ammari
Thomas Apel
Joachim von Below
Théophile Chaumont-Frelet
Patrick Ciarlet
Martin Costabel
Monique Dauge
Alexandre Ern
Emilia Fridman
Matthias Hieber
Patrick Joly
Hengguang Li
Stephanie Lohrengel
Jean Lubuma
Delio Mugnolo
Cristina Pignotti
Anna Sändig
Stefan Sauter
Roland Schnaubelt
Guido Sweers
Fredi Troeltzsch
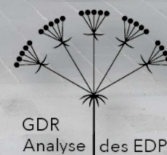Ali Wehbe
Christos Xenophontos
Enrique Zuazua

https://nicaise2021.sciencesconf.org/

LAMAV

Fédération de Recherche Mathématique des Hauts-de-France

Région Hauts-de-France

Institut ÉLIE CARTAN

Université Polytechnique HAUTS-DE-FRANCE

GDR Analyse des EDP

UMONS

ULB Francqui Chair 2021

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INTRODUCTION TO HOMOLOGICAL MIRROR SYMMETRY

Michel Van den Bergh
Director of Research
Fund for Scientific research

INAUGURAL LECTURE (ONLINE) ON MARCH 31 2021 AT 4:00 PM

Further lectures :

- April 21 2021 at 4h00 PM - Overview
- April 28 2021 at 4h00 PM - Symplectic side
- May 5 2021 at 4h00 PM - Algebraic tools
- May 10 2021 at 4h00 PM - Formulation

The series of lectures will be held online.

Fondation Francqui
Fondation d'Utilité Publique

ULB Faculté des Sciences

Free registration on sciences.ulb.be/la-recherche/francqui-chair-2021

Ouverture d'une charge de cours - Probabilités ou Processus stochastiques
Université de Mons

L'Université de Mons annonce la vacance d'une charge de cours à temps plein (1 ETP) dans le domaine des Sciences, en mathématiques, à pourvoir au 1er septembre 2021. La personne désignée le sera, dans une première phase, pour une durée déterminée de trois ans, éventuellement renouvelable pour une durée de deux ans et sera amenée à diriger un service dans le Département de Mathématique de la Faculté des Sciences. Une nomination définitive pourrait être décidée pendant ou à l'issue de ces périodes.

Les candidats doivent être titulaires d'un diplôme de docteur en Sciences avec thèse dans le domaine des sciences mathématiques. Ils doivent faire état d'une activité de recherche de haut niveau scientifique reconnue internationalement dont le thème principal concerne les probabilités ou les processus stochastiques. La personne retenue aura des activités de recherche et d'enseignement dans ce domaine, encadrera des thèses de doctorat et cherchera activement des financements via des projets de recherche gouvernementaux, européens ou industriels.

La charge comprendra notamment, en 2021-2022, les cours suivants :

- Mathématique appliquée aux sciences de la vie (4 crédits) en première année de Bachelier en Sciences Biologiques, en Sciences Pharmaceutiques et en Sciences Biomédicales ;
- Analyse III (12 crédits) en troisième année de Bachelier en Sciences Mathématiques ;
- Questions de probabilités (9 crédits) en première année de Master en Sciences Mathématiques.

La charge annuelle sera complétée avec des enseignements de Bachelier attribuées au Département de Mathématiques et/ou de Master en Sciences Mathématiques afin que celle-ci soit comparable à celles des autres membres du Département. Cette charge sera amenée à évoluer pour à terme contenir principalement des cours en probabilités et statistiques. La personne retenue encadrera des projets et mémoires de fin d'étude d'étudiants en section mathématique. Elle sera à terme responsable de la finalité spécialisée en métiers de la finance et du big data. Elle devra être capable d'enseigner en français dès septembre 2021.

Les lettres de candidatures, rédigées en français, avec l'exposé des titres, doivent être adressées, par lettre recommandée avec demande d'accusé de réception, à Monsieur le Recteur de l'Université de Mons, place du Parc 20, B-7000 Mons, Belgique et par mail à l'adresse secretariat.ca@umons.ac.be, dans un délai de 30 jours à dater de la publication du présent avis.

Les candidats sont invités à joindre un dossier comprenant les documents suivants : une lettre de motivation, un curriculum vitae, une liste des publications (avec accès électronique aux publications), un projet de recherche en théorie des probabilités ou des processus stochastiques (maximum cinq pages), un projet d'enseignement précisant la manière dont ils conçoivent les enseignements postulés (maximum cinq pages), une copie des diplômes, une copie des cinq publications les plus importantes, et les noms et adresses de trois experts internationaux pouvant donner un avis sur le candidat.

Tout renseignement utile peut être obtenu auprès du Prof. Christian Michaux, Doyen de la Faculté des Sciences (christian.michaux@umons.ac.be).

Les candidats sélectionnés seront convoqués pour un entretien qui comprendra la présentation d'une leçon et une discussion portant sur leur projet d'enseignement et de recherche.