

BELGIAN MATHEMATICAL
SOCIETY

Comité National de Mathématique CNM



NCW Nationaal Comité voor Wiskunde

**BMS-NCM NEWS: the Newsletter of the
Belgian Mathematical Society and the
National Committee for Mathematics**

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BMS-NCM NEWS

No 67, March 15, 2008



*Letter from the editor**Welcome*

to this March 15, 2008- Issue of our Newsletter.
Spring is coming!!! !!!!! *really???*

Regards, Françoise

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1 Meetings, Conferences, Lectures

1.1 April 2008

*MODNET Training Workshop-Model theory and Applications
La Roche-en-Ardenne, April 20-25, 2008*

A meeting of the research training network in Model Theory MODNET ;<http://www.logique.jussieu.fr/modnet/Home/>;
Toutes les informations sont disponibles sur <http://www.logique.jussieu.fr/point/modnetlogic.html>

1.2 May 2008

*Discrete groups and geometric structures, with applications
KUL, May 26-30, 2008*

See the page <http://www.kuleuven-kortrijk.be/workshop/>

*Spring school in nonlinear partial differential equations
UCL, May 26-30, 2008*

Organizers: J.P. Gossez (ULB), D. Bonheure, J. Van Schaftingen and M. Willem (UCL)

Confirmed lecturers: H. Berestycki (EHES), D.G. de Figueiredo (UNICAMP), S. Terracini (MILANO), M. Willem (UCL)

Description

The thematic of the Spring school on nonlinear partial differential equations is centered around nonlinear elliptic partial differential equations. The four 6 hours lectures will deal with various modern and active research fields of the theory of partial differential equations that interplay one with the others. Participants will have the opportunity to present a short communication.

Information

Homepage: <http://www.uclouvain.be/math-spring-school-pde-2008.html>
e-mail: denis.bonheure@uclouvain.be.

*Wavelets in the presence and in the future
Tuesday 27-05-2008, Universiteit Hasselt, Auditorium H5*

Symposium, organized by Freddy Dumortier, on the occasion of the honorary doctorate that will be given to Ingrid Daubechies on May 28.

Speakers:

- Ingrid Daubechies (Princeton University)
- Wolfgang Dahmen (RWTH-Aachen)
- Stéphane Jaffard (Université Paris 12- Val de Marne)
- Ignace Loris (Vrije Universiteit Brussel)
- Rainer von Sachs (Université Catholique de Louvain)

The symposium starts at 10:00 and finishes at 17:00. A detailed program follows. Information will also be made available at <http://www.uhasselt.be/dysy/>

The talks will be directed to a broad audience of scientists who are interested in recent developments and applications of wavelet-theory.

Participation, including coffee, is free of charge. In order to permit a smooth organisation, inform us as soon as possible about your participation at freddy.dumortier@uhasselt.be

1.3 June 2008

*2008 FNRS-functional analysis group meeting
June 5-6, 2008*

The meeting will take place in Esneux (near Liège), on Thursday June 5 and Friday June 6, 2008.

Contact: Françoise Bastin (F.Bastin@ulg.ac.be)

The following speakers and titles are confirmed

- Leonhard Frerick, Trier
Extension operators for Withney jets
- Maria del Carmen Gomez Collado, Universidad Politecnica de Valencia,
Regularity of solutions of convolution equations on spaces of ultradistributions
- Karl Grosse-Erdmann, University Mons-Hainaut
On the iterate of a map with dense orbit
- Hans Jarchow, Zürich
Extension of bilinear forms
- Krzysztof Piszczek, A. Mickiewicz University Poznan,
Properties of (PLS)-spaces inherited by their tensor products
- Jurgen Voigt, Dresden
Perturbed substochastic C_0 -semigroups, the problem of honesty

1.4 July 2008

*Fifth European Congress of Mathematics
Amsterdam, July 14-18, 2008*

Informations can be found at the address <http://www.5ecm.nl>

The Fifth European Congress of Mathematics (5ECM) will be organized in Amsterdam, from 14 - 18 July, 2008, under the auspices of the European Mathematical Society. This congress is the fifth in a series of successful four-yearly European congresses that cover the whole range of the mathematical sciences, from pure to applied. The series started in Budapest, in 1992, followed by meetings in Paris (1996), Barcelona (2000), and Stockholm (2004). The ECM congresses alternate with the IMU world congresses, organized every (2 mod 4) year.

Next year's ECM congress will be organized under the special patronage of the Koninklijk Wiskundig Genootschap (Royal Dutch Mathematical Society, KWG), and will include the yearly meeting of the members of KWG. The 5ECM Local Organizing Committee consists of André Ran (Free University Amsterdam, chairman), Herman te Riele (CWI Amsterdam, secretary), and Jan Wiegerinck (University of Amsterdam, treasurer).

An outstanding Scientific Committee with representatives from all over Europe, chaired by Lex Schrijver (CWI and University of Amsterdam), has composed an interesting scientific program consisting of ten Plenary lectures, three (also plenary) Science lectures, about thirty (parallel) invited lectures, and twenty-one (parallel) Minisymposia. In addition, ten Prize lectures will be presented by outstanding young European mathematicians, selected by a Prize Committee chaired by Rob Tijdeman (Leiden University).

The ten *Plenary lectures* will be presented by

- Luigi Ambrosio (Scuola Normale Superiore di Pisa),
- Christine Bernardi (Université Paris VI),
- Jean Bourgain (IAS Princeton),
- Jean-François Le Gall (ENS & Université Paris VI),
- François Loeser (ENS Paris),
- László Lovász (Eötvös Loránd University, Budapest),
- Matilde Marcolli (Max Planck Institut Bonn),
- Felix Otto (Universität Bonn),
- Nicolai Reshetikhin (Univ. of California, Berkeley),
- Richard Taylor (Harvard University, Cambridge)

and the three *Science lectures* by

- Ignacio Cirac (Max-Planck-Institut für Quantenoptik, Garching, Germany), on Quantum Information Theory,
- Tim Palmer (ECMWF Reading, UK), on Climate Change,
- Jonathan Sherratt (Heriot-Watt University, Edinburgh, UK), on Mathematical Biology.

The *topics and the organizers of the Minisymposia are:*

- Advances in Variational Evolution (Alexander Mielke, Ulisse Stefanelli)
- Algebra in Optimization (Jan Draisma, Monique Laurent)
- Applications of Noncommutative Geometry (Gunther Cornelissen, Klaas Landsman)
- Applied Algebraic Topology (Michael Farber)
- Combinatorics of Hard Problems (Josep Diaz, Oriol Serra, Jaroslav Nesetril)
- Coupled Cell Networks (Peter Ashwin, Ana Dias, Jeroen Lamb)
- Discrete Structures in Geometry and Topology (Dmitry Feichtner-Kozlov)
- Galois Theory and Explicit Methods (Bart de Smit)
- Global Attractors in Hyperbolic Hamiltonian Systems (Andrew Comech, Alexander Komech)
- Graphs and Matroids (Bert Gerards, Hein van der Holst, Rudi Pendavingh)
- Hypocoellipticity, Analysis on Groups and Functional Inequalities (W. Hebisch, B. Zegarlinski)
- Mathematical Challenges in Cellular Systems (Frank Bruggeman, Mark Peletier)
- Mathematical Logic (Peter Koepke, Benedikt Löwe, Jaap van Oosten)
- Mathematical Finance (Hans Schumacher, Peter Spreij)
- Mathematics of Cryptology (Ronald Cramer)
- Representation Theoretical Methods and Quantization (Stefaan Caenepeel, Jürgen Fuchs, Alexander Stolin, Christoph Schweigert, Freddy van Oystaeyen)
- Rough Path Theory (Peter K. Friz)
- Singular Structures in Variational PDE's (Matthias Roeger, Mark Peletier)
- Spectral Problems and Hilbert Spaces of Entire Functions (Joaquim Bruna, Hakan Hedenmalm, Kristian Seip, Mikhail Sodin)
- Spectral Theory (E.B. Davies, T. Weidl, F. Klopp, T. Hoffmann-Ostenhof)
- Weak Approximations of Stochastic Differential Equations (Dan Crisan)

Special activities, organized by the KWG, are the Brouwer medal ceremony (an event organized every three years in memory of the Dutch mathematician L.E.J. Brouwer, consisting of a laudatio, a lecture and a medal presentation, followed by a reception), a historical lecture on Brouwer's life and work (by Dirk van Dalen), and the so-called Beeger lecture (an event organized every two years in memory of the Dutch high-school teacher and mathematician N.G.W.H. Beeger, with a talk on algorithmic and/or computational number theory). The names of the Brouwer and Beeger lecturers will be announced later.

For more information on the conference, such as grants, up-to-date information on the program, and for registration, please visit our website at www.5ecm.nl.

The organizers are proud that the EMS has selected Amsterdam to be the host city for its fifth congress, and we look forward to meeting you all next year in Amsterdam. Do not miss this opportunity to learn about the latest developments in mathematics, to meet old friends, and make new acquaintances, while enjoying a charming city with many 'do-not-miss-this' sights!

The 5ECM Local Organizing Committee

On the website: www.5ecm.nl you will find the **Call for Registration and Abstracts** with all information about the congress known so far. It is possible to register now for this event. Please notice that members of the EMS and of the KWG pay a reduced fee. **Registration before April 1, 2008 further reduces the fee.**

Noncommutative Structures in Mathematics and Physics
A Satellite Meeting of the Fifth European Congress of Mathematics
Brussels, July 22-26, 2008

Topics: Non-commutative geometry; algebraic and categorical structures; quantum groups and their representations; applications in mathematical physics.

Invited speakers: Y. Manin (Evanston and Bonn), C. De Concini (Rome), C. Kassel (Strasbourg), M. Van den Bergh (Hasselt), H.-J. Schneider (Munich), G. Böhm (Budapest), G. Landi (Trieste), S. Waldmann (Freiburg), J. Andersen (Aarhus), M. Markl (Prague), K. Fredenhagen (Hamburg), E. Karolinsky (Kharkov), M. Kapranov (New Haven).

Organizing Committee: S. Caenepeel (Brussels), F. Van Oystaeyen (Antwerp), S. Gutt (Brussels), C. Schweigert (Hamburg), J. Fuchs (Karlstad), A. Stolin (Göteborg)

Local Committee: S. Caenepeel, K. Janssen, J. Vercruyssen

Related event: Minisymposium Representation Theoretical Methods and Quantization at the Fifth European Congress of Mathematics in Amsterdam.

Parallel sessions: Requests for talks in parallel sessions will be considered by a selection committee; they should be submitted upon registration. Registration will start in October 2007.

Website: <http://dwispc8.vub.ac.be/NoMaP>

Website of 5ecm: <http://www.5ecm.nl>

2 Summary of PhD theses

Bayesian Semiparametric Methods for the Analysis of Complex Data

March 11, 2008

Alejandro Jara Vallejos

Promotors: E. Lesaffre, G. Verbeke, Irène Gijbels

Constraining the inference to a specific parametric form may limit the scope and type of inferences that can be drawn. In many practical situations a parametric model cannot be expected to describe in an appropriate manner the chance mechanism generating an observed dataset, and unrealistic features of some common models could lead to unsatisfactory inferences. In these situations, we would like to relax parametric assumptions to allow greater modeling flexibility and robustness against mis-specification of a parametric statistical model. In the Bayesian context such flexible inference can be achieved by placing a prior distribution on the the space of all probability distributions. We consider Dirichlet processes, Polya tree processes, and extensions of them to avoid critical dependence on parametric assumptions and to propose flexible modeling strategies in a variety of correlated data problems. We propose semiparametric models for the analysis of multivariate binary and doubly-interval-censored data. We provide a Bayesian semiparametric treatment of Generalized Linear Mixed Models.

3 Miscellaneous

3.1 Henri Bosmans

Première annonce de la deuxième¹ réunion sur le Père Henri Bosmans, historien des mathématiques et ancien Président de la Société Mathématique de Belgique (1923-1926).

A l'occasion de la parution prochaine des Actes de la première réunion, une seconde est organisée le

15 mai 2008 aux FUNDP à Namur.

Programme provisoire :

- Présentation de la Journée : Michel Hermans (FUNDP)
- Aldo Brigaglia (Università di Palermo), Saccheri vu par Corrado Segre en Italie et par Mansion et Bosmans en Belgique,
- Noël Golvers (KUL), présence à confirmer (thème : Bosmans, Verbiest et la Chine)

¹La première réunion s'était tenue à l'ULB les 12 et 13 mai 2006

- Jacques Riche (KUL), G.F. de Gottignies, géomètre et astronome : complément à un article posthume du P. Bosmans.
- Pierre Sauvage (FUNDP), titre à préciser

Pour tout renseignement : paul.vanpraag@umh.ac.be

3.2 From UMH

Le séminaire interuniversitaire de logique mathématique a repris ses activités hebdomadaires début octobre. Pour toute information sur le programme et les lieux, veuillez consulter en temps utile le site: <http://math.umh.ac.be/logic/seminars.htm> ou contacter christian.michaux@umh.ac.be

3.3 From ULB

Cours du Collège de France 2008 par Pierre Louis Lions (médaillé Fields)

Dans le cadre de l'accord liant le Collège de France et l'Université Libre de Bruxelles et en partenariat avec l'Académie royale de Belgique et avec les universités de la Communauté française de Belgique, des cours du Collège seront donnés dans les locaux de l'Académie chaque année et des colloques seront organisés. Ces cours et colloques sont accessibles à tous. Les prochains sont les suivants:

Pierre Louis Lions (Collège de France) présentera une série de quatre leçons dans le cadre de son cours : *Equations aux dérivées partielles et applications*, les 15, 16, 21 et 22 avril à 14 heures.

Jean-Pierre Changeux (Collège de France et Institut Pasteur) présentera une série de trois leçons sur le thème : *Des protéines allostériques à la communication neuronale*, le 22 mai à 11 et 14 heures et le 23 mai à 11 heures.

Lieu : Palais des Académies, rue Ducale, 1, 1000 Bruxelles. Entrée gratuite, réservation auprès de Madame Béatrice Denuit : arb@cfwb.be

3.4 From KUL

Prof. Dr. Joost van Hamel died January 12, 2008, at the age of 38. Since October 2004 he was docent at the KULeuven (department of Mathematics). His scientific work is situated in algebraic geometry and algebraic number theory.

3.5 From VUB

Ingrid DAUBECHIES will visit the VUB from May 26th till May 31. Contact: P. Cara (pcara@vub.ac.be)

3.6 From UHasselt

Position at UHasselt:

See the announcement at the end of this Newsletter (Sollicitatieformulieren kan u via e-mail enkel terugsturen op het adres: jobs@uhasselt.be)

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

4.1 Pi-Day

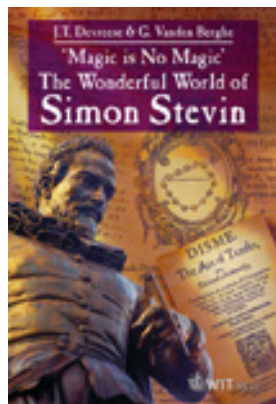
Did you know that you just missed Pi-day which is celebrated on 3/14 (March 14)? See

http://en.wikipedia.org/wiki/Pi_Day

4.2 Book

See within the next pages : *"Magic is No Magic" The wonderful world of Simon Stevin*

‘Magic is No Magic’ The wonderful world of Simon Stevin *J.T. Devreese and G. Vanden Berghe*
WIT Press, Southampton, Boston 2008 (310 p.), hard cover, ISBN 978-1-84564-092-7, €142.50.



Simon Stevin (Bruges, 1548 - 1620, The Hague) is one of the few Flemish mathematicians that are known worldwide. When asking a Flemish person to name a famous historical Flemish mathematician, there is a high probability that he would come up with Simon Stevin. Many items like city squares, lecture series, scientific journals, classrooms, buildings, etc. are named after him. Born in Bruges in 1548, Simon Stevin moved to Leiden in 1581 where he attended the newly founded University in 1583-1590. Somewhat later he becomes good friends and private tutor of Prince Maurice of Nassau. He remains a devote adviser to the Prince on many diverse subjects. Therefore, being strongly connected to the house of Nassau, some people might think wrongly that he was a Dutchman. Of course when Stevin was born, the distinction was not as clear as it is now. The Low Countries ranged from Ar-

tois in the North of France to Friesland. It was only in 1585 that Alexander Farnese took Antwerp after which the Catholic South was separated from the Protestant North. Although he spent most of his active life in the North, Stevin has always mentioned in his books that he was from Bruges.

The impact of Simon Stevin on science, politics, and culture can not be underestimated. But I believe that not many of those people who can remember him as a famous mathematician could list all or even a few aspects of what he was famous for. Those who ask the question and those who cannot answer it can google away on the internet since much is available there, but much more can be found in this richly illustrated and amply documented book.

Simon Stevin was a true engineer with many inventions and patents, but he was also a strategist, a politician, a mathematician, he was creative with Dutch language, a didactic genius, an economist, and much more. He was the product of his time: the real *homo universalis* of the Renaissance period. That period brought new insights, rediscovering the old Greek and Latin knowledge. Book printing played an important role in spreading this knowledge all over Europe. The famous printing house of Christopher Plantin in Antwerp was a main publisher of Stevin's books. Thus the brilliant wit of Simon Stevin made him the right person at the right place and at the right time.

Besides a precise evocation of the political and religious background of those days, this book highlights in its chapters several of Simon Stevin's contributions. One of his most important contributions was his promotion of the decimal system. The monetary system, but also measures like weight and length had the most chaotic counting system that were even different from place to place. Simon Stevin's contribution here was his work *De Thiende* translated as *The Disme, the art of tenths*, a French translation was included in his *L'Arithmetique* and other translations in several other languages followed. It is quite astonishing to realize how complex numerical computations are when one does not have a decimal notation for numbers as we are all so familiar with today.

But Simon Stevin was also a true engineer and inventor. He invented gears for windmills and sluice constructions, sailing cars, and this like – water and wind being typical Dutch raw material – but he also wrote on architecture, military science, bookkeeping (in particular double entry bookkeeping), interest calculation, architecture, politics, etc.

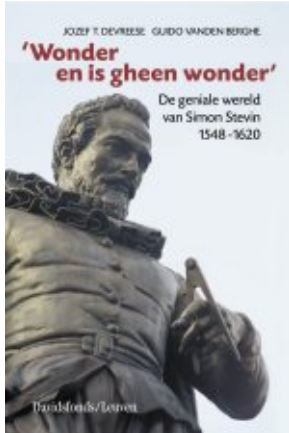
His immortal work on statics and hydrostatics in 1586 is his major innovative achievement. The *Beghinselen der Weeghconst* (the art of weighing) and *De Beghinselen der Waterwichts* (hydrostatics) are indeed the first important contributions in these areas since antiquity. We find here, as in his other works, the perfect combination of the teacher, the engineer and the mathematician/physicist. In his

A rectangular box containing a handwritten signature in dark ink. The signature is written in a highly stylized, cursive script that is characteristic of the 16th or 17th century. The name 'Simon Stevin' is clearly discernible despite the flourishes.

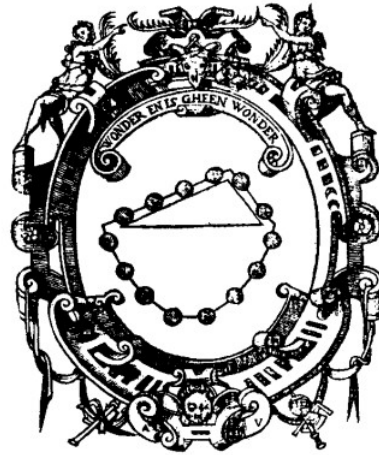
Simon Stevin's signature



Simon Stevin's statue in Bruges



Dutch version of 'Magic is no magic'



Logo and motto of Simon Stevin

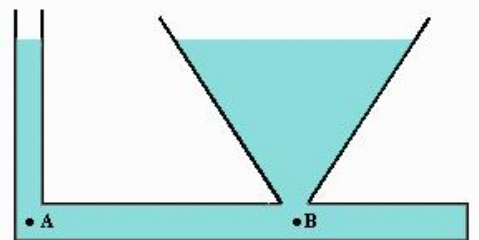


Book on statics

view, theory and practice should always go together. On the cover page of the book one can see the *Clootcrans* (wreath of spheres) by which he proved a basic physical law: the impossibility of a *perpetuum mobile*. Actually this could justly be called Stevin's law. This chain of balls has more balls, and hence more weight, on the longer ramp than on the shorter one, and thus, assuming there is no friction, a perpetual motion would result. However, Stevin showed that, if friction were removed, there would not be any motion because the system is in an equilibrium. He was obviously so proud of this, that he used the figure as a logo on many of his books published since. It is also on found his gravestone.

On the same image one will also discover Stevin's motto *Wonder en is gheen wonder* (magic is no magic). This was also used as the title for the preceding Dutch version of this book (Davidsfonds, Leuven, 2003). The explanation is simple. It seems like a miracle that the chain of balls is not rolling in perpetual motion, but when one thinks about it scientifically, it is not a miracle at all. This was Simon Stevin's conception of what science should be, just like he persistently coupled theory and practice. One is impossible without the other. A science teaching paradigm that seems to be recently rediscovered.

In his book on hydrostatics we also find an explanation of what is nowadays known as the hydrostatic paradox. This was about half a century before Pascal. Note also that this was written before he was entering in the service of the Prince of the Republic. After this work he divided his interest over many different subjects and became the *homo universalis* as we know him. One might wonder what else he could have achieved had he devoted his life to one part of science only.



Hydrostatic paradox: the large amount of water above B is in equilibrium with the small amount of water above A

But he was interested in almost everything. For example, his influence on the Dutch language is not to be underestimated. Almost all his work is written in Dutch. He wrote a didactical survey text on the principles of perspective for the Prince. These were just discovered by painters of those days and caused a revolution in graphical arts. But he also wrote on music, on astronomy, fortifications, etc. He became quartermaster of the army in 1604. His lessons to the Prince on mathematics, astronomy and bookkeeping were collected in his *Wisconstighe Ghedachtenissen* (mathematical thoughts) and were published in 1905-1908 and translated in Latin and in French.

Besides his scientific career we read in this book of course also a lot about his personal life and character, but not too much though. Partly because not much sources are available there. For example the precise circumstances concerning the time of his birth and death are curiously still unavailable.

This is a richly illustrated and very well documented book that is as broad as Simon Stevin's interests were broad. It is a delight to read for everyone with the slightest interest in science and history.

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 .
- ... that the first 500 decimals of the number π are:

3.141592653589793238462643383279502
 88419716939937510582097494459230781
 64062862089986280348253421170679821
 48086513282306647093844609550582231
 72535940812848111745028410270193852
 11055596446229489549303819644288109
 75665933446128475648233786783165271
 20190914564856692346034861045432664
 82133936072602491412737245870066063
 15588174881520920962829254091715364
 36789259036001133053054882046652138
 41469519415116094330572703657595919
 53092186117381932611793105118548074
 46237996274956735188575272489122793
 818301194913

- ... that the number π is defined as the ratio of the circumference of a circle to its diameter.
- ... that the notation π was probably used for the first time in the book Synopsis Palmariorum Mathesos (1706) (translation: a new introduction to mathematics) by a certain William Jones (1675-1749)?

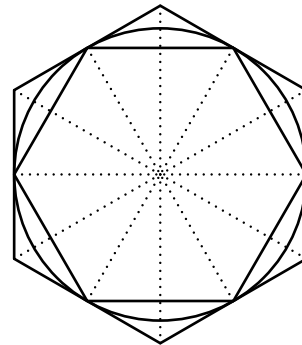
tate the Practice; as for Instance, in the Circle, the Diameter is to Circumference as 1 to

$$\frac{16}{3} - \frac{4}{239} - \frac{1}{3} \frac{16}{5^3} - \frac{4}{239^3} + \frac{1}{5} \frac{16}{5^5} - \frac{4}{239^5} - \dots \text{ \&c.} = 3.14159, \text{ \&c.} = \pi \dots$$

The great mathematician Leonhard Euler (1707-1783) was responsible for the popularization of the notation.

- ... that there is absolutely no periodicity to be found in the decimals of the number π ? And so there is no fraction with integer numerator and denominator that equals π ? (So 22/7 is just an approximation;-)
- ... that Archimedes already calculated approximations to π around 250 BC? He did this by constructing regular polygons (with an increasing number of sides) inscribed and circumscribed to a circle of radius one, and

calculating half the circumference of these polygons.



These values give lower and upper bounds to the value of π . This is why the number π is sometimes called *Archimedes' constant*.

- ... that the oldest exact formulas for the number π are:

(1579) the Viète-productformula

$$\frac{2}{\pi} = \sqrt{\frac{1}{2}} \cdot \sqrt{\frac{1}{2} + \frac{1}{2}} \cdot \sqrt{\frac{1}{2}} \cdot \sqrt{\frac{1}{2} + \frac{1}{2}} \cdot \sqrt{\frac{1}{2}} \cdot \sqrt{\frac{1}{2} + \frac{1}{2}} \cdot \sqrt{\frac{1}{2}} \cdot \dots$$

(around 1650) the Wallis-productformula

$$\frac{2}{\pi} = \frac{1 \cdot 3}{2 \cdot 2} \cdot \frac{3 \cdot 5}{4 \cdot 4} \cdot \frac{5 \cdot 7}{6 \cdot 6} \cdot \dots$$

(1655) Lord Brouncker's continued fraction

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

(around 1670) the Gregory-Leibniz-series

$$\frac{\pi}{4} = 1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \dots$$

was already known around 1400 by the Indian mathematician Madhava of Sangamagrama.

- ... that Ludolph Van Ceulen (1540-1610), a German mathematician, spent the bigger part of his life calculating digits of the number π by hand. Using Archimedes' method he was able to compute the first 35 decimals. This is why π is sometimes called the *Ludolphian number*.
- ... that William Shanks (1812-1882), a British amateur-mathematician, did better? He wasted (?) 20 years of his life calculating the first 707 decimals. He had a fixed daily routine: calculating in the morning, checking in the afternoon.
- ... that William Shanks made an error in the 527th decimal? And that as a consequence rest of his calculations were useless?
- ... that the most commonly used formula for the calculation of π is *Machin's formula*? This is it:

$$\frac{\pi}{4} = 4 \cdot \text{Arctan} \frac{1}{5} - \text{Arctan} \frac{1}{239}$$

- ... that the first 707 decimals as calculated by Shanks were painted in 1937 on the ceiling of a room in the science museum Palais de la Découverte in Paris, and that only in 1947 the decimals which were in error, were repainted?



- ... dat the 1 241 100 000 000th decimal of the number π is a 5?
And that the computation of this number by the Japanese computer scientist Yasumasa Kanada took 620 hours on a Hitachi SR8000 computer with access to a memory of about 1 terabyte?
- ... that if you're interested in the first 70 billion decimals of the number π , you can download them at <http://ja0hvx.calico.jp/pai/epivalue.html> .

- ... the Japanese engineer Akira Haraguchi recited the first 100 000 decimals of π from memory on October 1, 2006. It took him 16 hours. This new world record is not yet recognized by the Guinness Book of Records.
- ... that recently an algorithm was developed that is able to calculate a specific digit of π without calculating the previous ones? (That the algorithm only works in the hexadecimal number system is only a minor inconvenience;-)
- ... that the number

$$\frac{\ln(640\,320^3 + 744)}{\sqrt{163}}$$

is an approximation of the number π which is accurate to 30 digits?

- ... that there is a movie from 1998 entitled π ?
- ... that in the American state Indiana an attempt was made in 1897 to define the value of π by law as being 3.2?
- ... that there are many mnemonics for the number π , for example:
How I want a drink, alcoholic of course, after the heavy lectures involving quantum mechanics.
- ... that there is a form of poem with a structure based on the number π ? Here is an example in Dutch (note the number of lines in each stanza) by Drs. P:

Pi-sonnet

*Drie, een, vier, een en vijf ... verstijft u even?
Goed - tweeëntwintig dan, gedeeld door zeven
Precies, dat is wat ik bedoelde: π*

Een Fransman wou daar een sonnet mee maken

*Die reeks vertoont wel weinig symmetrie
Maar veertien in totaal is een gegeven
Twee losse regels tot refrein verheven -
Zo wordt het een gedicht, wel wis en drie*

Jacques Bens wist dus een nieuw sonnet te maken

*Wie zou hiervan niet in vervoering raken?
Na twintig jaar belandde 't goed en wel
In onze taal. U moet van ijver blaken
Om op zo'n innovatie in te haken
(Hij noemde die sonnet irrationnel)*



De Universiteit Hasselt draagt bij tot de ontwikkeling van de kenniseconomie in de (Eu)regio. Actief onderwijs op maat van de student, toponderzoek in welomlijnde domeinen en een internationale oriëntatie zijn haar kenmerken.

Dank zij haar kleinschaligheid bouwt zij met haar medewerkers aan een organisatie waar het aangenaam werken is. Kwaliteiten bij mensen zijn de enige maatstaf. Geslacht, etnische afkomst, handicap, nationaliteit, leeftijd worden niet in overweging genomen.

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In het departement Wiskunde-Natuurkunde-Informatica van de Universiteit Hasselt zijn volgende mandaten (m/v) vacant:

2 assistenten Zuivere Wiskunde (3x2 jaar)

(mandaat WNI/2008/004-005)

Opdracht

Van de kandidaten wordt verwacht dat zij zullen werken aan een doctoraat in één van de onderzoeksgroepen van de vakgroep Zuivere Wiskunde, hetzij Algebra hetzij Dynamische Systemen. Beide onderzoeksgroepen hebben een ruime onderzoekservaring en een internationale uitstraling. De kandidaten zullen ingeschakeld worden in instellingsbreed wiskunde-onderwijs.

Diploma

Licentiaat/master in de wiskunde of gelijkwaardig.

Bijkomende inlichtingen

- . Inhoud takenpakket:
 - Prof. dr. Freddy Dumortier, 011-26 82 39, freddy.dumortier@uhasselt.be
 - Prof. dr. Erna Nauwelaerts, 011-26 82 29, erna.nauwelaerts@uhasselt.be
- . Inhoud arbeidsvoorwaarden en selectieprocedure: Jef Vanvoorden, 011-26 80 80, jef.vanvoorden@uhasselt.be

Kandidaatstelling

Gebeurt met sollicitatieformulieren die u

- . kan aanvragen bij het Rectoraat van de Universiteit Hasselt, Campus Diepenbeek - Agoralaan, gebouw D, 3590 Diepenbeek, tel 011-26 80 03
- . kan downloaden via de site <http://www.uhasselt.be/actueel/vacatures/sollicitatieforms.asp> en die, ingevuld, uiterlijk op **donderdag 3 april 2008** op dit adres dienen toe te komen.