INFOMAT

Juni 2009

Kjære leser!

Årets Shawpris går til Simon Donaldson og Clifford Taubes for deres briliante bidrag til 3- og 4-dimensjonal geometri. Abelprisen gikk til Mikhail Gromov for hans revolusjonerende bidrag innen geometri. Et tilfeldig og interessant sammentreff eller er det noe som ligger i lufta?

I anledning av at sommerferien står for døren har INFOMATs redaksjon spandert på seg litt humor i dette nummeret. Det finnes utallige matematikk-vitser og vi gjengir noen av dem.

In the topologic hell the beer is packed in Klein's bottles.

God sommer!

hilsen Arne B.

INFOMAT ØNSKER ALLE SINE LESERE EN GOD SOMMER!

Two math professors are sitting in a pub. "*Isn't it disgusting*", the first one complains, "*how little the general public knows about mathematics?*" "*Well*", his colleague replies, "*you're perhaps a bit too pessimistic.*" "*I don't think so*", the first one replies. "*And anyhow, I have to go to the washroom now.*"

He goes off, and the other professor decides to use this opportunity to play a prank on his colleague. He makes a sign to the pretty, blonde waitress to come over. "*When my friend comes back, I'll wave you over to our table, and I'll ask you a question. I would like you to answer: x to the third over three. Can you do that?*" "*Sure.*" The girl giggles and repeats several times: "*x to the third over three, x to the third over three, x to the third over three...*"

When the first professor comes back from the washroom, his colleague says: "*I still think, you're way too pessimistic. I'm sure the waitress knows a lot more about mathematics than you imagine.*" He makes her come over and asks her: "*Can you tell us what the integral of x squared is?*" She replies: "*x to the third over three.*" The other professor's mouth drops wide open, and his colleague grins smugly when the waitress adds: "*...plus C.*"

Matematisk kalender

Juni:
22.-26. *International conference on spectral and higher order methods*, Trondheim
August:
10.-14. *Homological and geometric methods in algebra*, Trondheim
Oktober:
12.-17. *An international Conference on Stochastic Analysis and Applications*, Hammamet, Tunisia

INTERNATIONAL CONFERENCE ON SPECTRAL AND HIGH ORDER METHODS
Trondheim, 22.-26. juni 2009

Mer informasjon på
http://www.math.ntnu.no/icosahom/

HOMOLOGICAL AND GEOMETRIC METHODS IN ALGEBRA,
Trondheim 10.-14. august 2009

Mer informasjon på
http://www.math.ntnu.no/mat/alg/ConfHGMA/

Nye doktorgrader

Marie E. Rognes forsvarte 2. juni 2009 sin avhandling *Mixed finite element methods with applications to viscoelasticity and gels* for Ph.D.-graden ved Universitetet i Oslo.

UNIVERSITETET I OSLO

Jan-Fredrik Olsen forsvarte 29. mai 2009 avhandlingen *Boundry properties of modified zeta functions and function spaces of Dirichlet series* for Ph.D.-graden ved NTNU.

◼ NTNU

Fra instituttene

NY INSTITUT-TLEDER

Professor **Sverre Smalø** er blitt valgt til ny instituttleder ved IMF. Han overtar ledervervet fra 1. august.

STUBBANPRISEN DELT UT

Stubbanprisen gis hvert år til de to beste studentene på mastergradsstudiet i matematikk. I år var det Siri-Malén Høynes fra Førde og Eivind Fonn fra Trondheim som ble denne ære til del og mottok prisen på kr. 25 000.
John Olav Stubban var professor i matematikk ved NTH fra 1956 til 1974. Stubban og kona Hanna var barnløse og hadde ikke nære livsarvinger. Etter Stubbans ønske ble det opprettet et eget fond i 2001, etter at begge var gått bort.
Formålet til Hanna og John Olav Stubbans matematiske fond ved NTNU er ifølge statuttene "å belønne lovende unge matematikere ved utdeling av Stubbans matematiske pris. Prisen gis normalt ut årlig til de to beste studentene som er i ferd med å gjennomføre et cand.scient.- eller siv.ing.-studium i matematikk ved NTNU".

SØSTRENE DALS PRIS TIL SERGEY NESHVEYEV

Prof. Ingerid Dal og søster Ulrikke Greve Dals legat til støtte for humanistisk forskning deler ut en pris, som ca. hvert tredje år gis til en matematiker. Tidligere prisvinnere er Bjørn Dundas, John Rognes og Ola Bratteli. I år vil prisen bli gitt til Sergey Neshveyev. Den vil bli delt ut etter sommerferien og er i år på kr. 150 000.

NYHETER

SHAW-PRISEN TIL DONALDSON OG TAUBES

The Shaw Prize in Mathematical Sciences 2009 is awarded in equal shares to **Simon K Donaldson** and **Clifford H Taubes** *for their many brilliant contributions to geometry in 3 and 4 dimensions.*

Geometry and Physics have been closely related from the earliest times and the differential calculus of Newton and Leibniz became the common mathematical tool that connected them. The geometry of 2-dimensional surfaces was fully explored by these techniques in the 19th century. It was closely related to algebraic curves and also to the flow of fluids.

Extending our understanding to 3-dimensional space and 4-dimensional space-time has been fundamental for both geometers and physicists in the 20th and 21st centuries. While the calculus is still employed, the problems are now much deeper and totally new phenomena appear.

Simon K Donaldson and Clifford H Taubes are the two geometers who have transformed the whole subject by pioneering techniques and ideas originating in theoretical physics, including quantum theory. Electromagnetism is governed by the famous differential equations of Clerk Maxwell and these equations were used in the early 20th century by William Hodge as geometric tools. They were particularly useful in the geometry associated with algebraic equations, extending the work of the 19th century mathematician Bernhard Riemann.

The physical forces involved in the atomic nucleus are governed by the Yang-Mills equations which generalize Maxwell's equations but, being non-linear, are much deeper and more difficult. It was these equations which Donaldson used, basing himself on analytical foundations of Taubes, to derive spectacular new results. These opened up an entirely new field where more and more subtle geometric results have been established by Donaldson, Taubes and their students. The inspiration has frequently come from physics, but the methods are those of differential equations.

A key strand of this newly developing theory is the close relation that has been found between solutions of the Yang-Mills equations and the geometry of surfaces embedded in 4 dimensions. A definitive result in this direction is a beautiful theorem of Taubes which essentially identifies certain "quantum invariants" with others of a more classical nature. Many old conjectures have been settled by these new techniques, but many more questions still pose a challenge for the future. Donaldson and Taubes between them have totally changed our geometrical understanding of space and time.

Simon K Donaldson, born 1957 in Cambridge, UK, is currently the Royal Society Research Professor of Pure Mathematics and President of the Institute for Mathematical Sciences at Imperial College, London, UK. He received his BA from Pembroke College, Cambridge in 1979 and his PhD from Oxford University in 1983. In 1986 he was elected as Fellow of the Royal Society.

Clifford H Taubes, born 1954 in Rochester, New York, USA, is currently the William Petschek Professor of Mathematics at Harvard University. He was an undergraduate at Cornell University and received his PhD in Physics from Harvard University in 1980. He is a member of the US National Academy of Sciences.

NOTISER

NY PRIS FRA IMU

The International Mathematical Union (IMU) and the Chern Medal Foundation (CMF) jointly launch a new mathematical prize, the Chern Medal Award, in memory of the outstanding mathematician Shiing-Shen Chern.

The Award is to be given to an individual whose lifelong outstanding achievements in the field of mathematics warrant the highest level of recognition. It consists of a medal and a monetary award of US$ 500,000. Half of the amount shall be donated to organizations of the recipient's choice to support research, education, outreach, or other activities to promote mathematics.

The Chern Medal will be awarded for the first time at the opening ceremony of ICM 2010 in Hyderabad, India on August 19, 2010.

The Chern Medal Award is established in memory of the outstanding mathematician Shiing-Shen Chern (1911, Jiaxing, China - 2004, Tianjin, China). Professor Chern devoted his life to mathematics, both in active research and education, and in nurturing the field whenever the opportunity arose. He obtained fundamental results in all the major aspects of modern geometry, and founded the area of global differential geometry. Chern's work exhibited keen aesthetic tastes in his selection of problems and in his breadth exemplified the interconnectiveness of modern geometry and all of its aspects.

Shing-Shen Chern (1911-2004)

NOEN MATEMATIKKVITSER FRA VOLKER RUNDES WEB-SITE

Q: When did Bourbaki stop writing books?
A: When they realized that Serge Lang was a single person...

Teacher: "Who can tell me what 7 times 6 is?"
Student: "It's 42!"
Teacher: "Very good! - And who can tell me what 6 times 7 is?"
Same student: "It's 24!"

Q: How can you tell that a mathematician is extroverted?
A: When talking to you, he looks at your shoes instead of at his.

"Wasn't yesterday your and your wife's first wedding anniversary? What is it like having being married to a mathematician for a whole year?"
"She just filed for divorce..."
"I don't believe it! Did you forget about your wedding day?"
"No. Actually, on my way back home from work, I stopped at a flower store and bought a bouquet of red roses for my wife. When I came home, I gave her the roses and said: `I love you.'"
"So, what happened?!"
"Well, she took the roses, slapped them around my face, kicked me in the groin, and threw me out of our apartment..."
"What a bitch!"
"No, no... it's all my fault... I should have said: `I love you and only you.'."

Q: Why do mathematicians often confuse Christmas and Halloween?
A: Because Oct 31 = Dec 25.

There are only 10 types of people in the world - those who understand binary, and those who don't.