hausdorff center for mathematics

universitätbonn

hcm NEWS 1/2016

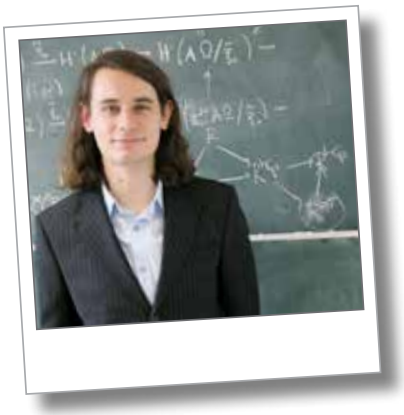
HAUSDORFF SPECIALS

Hausdorff Chair Peter Scholze receives the Leibniz Prize

December 10, 2015

Prof. Dr. Peter Scholze from the Hausdorff Center for Mathematics has been awarded the prestigious Leibniz Price 2015 for his outstanding research achievements. The prize comes with a grant of up to 2.5 million euro, which provides the awardess with great freedom in their research. The mathematician from Bonn is the youngest laureate since the establishment of the prize in 1985.

With this prize the DFG appreciates Scholze's research in the field of arithmetic and algebraic geometry. He is widely recognized for his work on the Langland conjectures. In 1967, Robert P. Langlands postulated a possible connection between several research fields. He assumed that this link could help to "translate" several unsolved problems from one field to another in order to solve them there. As a result a set of theories about these possible connections were developed, which are now known as the "The Langlands Program". Mathematicians all over the world are working on proving these Conjectures. Scholze also developed the local Langland conjectures for p-adic bodies with geometric methods. In 2012 he published his theory of "perfectoid spaces". Following the introduction of this new theory he was able to generalize an important theorem by his colleague Gerd Faltings, who recently received the Shaw Prize. Also, Scholze developed new geometric interpretations for spaces that have been first described by his doctoral supervisor Michael Rapoport.



Peter Scholze is presumably the youngest person to hold a W3-professorhip in Germany and has already established himself as a big name in mathematics. Despite his young age he has already earned numerous prestigious awards. In 2015 alone, he already received the Prix Fermat, the Ostrowski Prize, the AMS Cole Prize in Algebra and the Clay Research Award.

The Rektor and the the Kanzler of the University of Bonn visited Peter Scholze spontaneously to congratulate him when the Leibniz Prize winners were announced. Rektor Prof. Hoch said: "We compliment professor Scholze on winning the Leibniz Prize and we're very happy about this recognition of his excellent research. He's really an exceptional talent and we're very glad to have him amongst us."

A movie about the Leibniz Prize is available on our YouTube channel.

HAUSDORFF SPECIALS

New Formula for Life-Satisfaction

Press release from October 1, 2015

University of Bonn: Lasting increases in income improve well-being. Extra work makes people more dissatisfied

In a new study, mathematical economist Prof. Dr. Christian Bayer, from the Hausdorff Center for Mathematics at the University of Bonn, has demonstrated a connection between long-term income increases and personal satisfaction. Overtime also affects personal levels of happiness – but in a negative way. His findings will be presented in the latest issue of the "American Economic Journal".

Can money buy happiness? A study by Professor Christian Bayer from the University of Bonn provides new answers to this often-discussed question. In the project, Prof. Bayer worked with his colleague Prof. Falko Jüssen from Bergische Universitaet Wuppertal to research how increased income and workload influenced overall life satisfaction. Their findings were clear: more money does make people happier – but only if there is a long-term increase in income. A temporary increase does not have any noticeable effect on an employee's level of happiness, even if it is a large increase. By contrast, a permanent increase in income results in a significant rise in well-being, even if the raise is small.

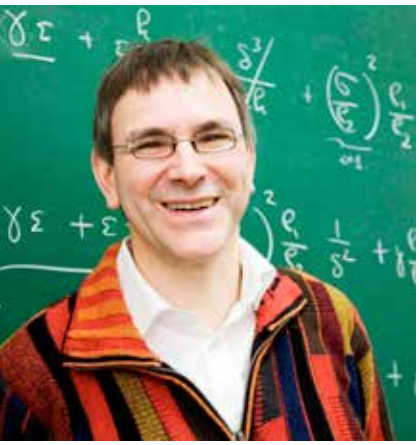
The researchers identified a second important way in which professional life influences personal happiness: the number of hours that employees work. "Those who consistently have to work more become less happy," says Prof. Bayer, an instructor and researcher at the Institute for Macroeconomics and Econometrics at the University of Bonn. "This finding contradicts many other studies that conclude people are more satisfied when they have any job than none at all." The new study suggests that the unemployed suffer from the lack of income not the lack of employment per se.

For their study, the mathematical economists developed a new approach to analyze the link of income to personal levels of happiness. While earlier studies on this topic were based purely on static models, Prof. Bayer and Prof. Jüssen also included the dynamics of changing income levels. As it turned out, that was a key step toward a better understanding of how income level and working hours affect well-being. Long-term income increases have a completely different effect on an employee's satisfaction than temporary raise does. Previous studies had not taken this distinction into account, and treated all changes in income equally.

The study also proves that a functioning financial market is important for balancing out the effects of income fluctuations and extra work on a person's well-being. "Our findings show that wages and working hours have more to do with a worker's happiness and/or unhappiness than was previously assumed," says Prof. Bayer. "So the formula for greater satisfaction in life seems to be: persistently more money while working the same number of hours."

Stefan Müller and Werner Müller elected as members of the Academia Europaea

November 23, 2015



Hausdorff Chair Stefan Müller (Image) and Werner Müller (Mathematical Institute) have been invited to become full members of the scientific society "Academia Europaea" in November. Only European scientists, who have been recommended by a review board and are confirmed by a vote of the council, can join the society.

Peter Scholze receives the Prix Fermat

November 25, 2015

Hausdorff Chair Peter Scholze has been awarded the 2015 Fermat Prize of the Institut de Mathématiques de Toulouse. With this award the institute honors the introduction of perfectoid spaces and their application to fundamental problems of algebraic geometry by Scholze.

HAUSDORFF PEOPLE

Banxian Han is a new Hausdorff Postdoc in the working group of Karl-Theodor Sturm. He studied at the University of Paris-Dauphine and is researching the analysis and geometry of metric measure spaces.

Constanza Rojas-Molina has worked since October in Anton Bovier's group on wave propagation in disordered systems. She completed her PhD at the Université de Cergy-Pontoise and stayed as a Marie Curie Postdoctoral Fellow at the LMU München before she came to Bonn.

Thomas Bodendorfer joined the school team of the HCM in October and participated in organizing the exhibition "Transcending Tradition".

Lorenzo Dello Schiavo joined Karl-Theodor Sturm's research group as a new PhD student on November 1. He's interested in the theory of metric measure spaces and optimal transport.

HAUSDORFF EVENTS

"Transcending Tradition. Jewish mathematicians in German-speaking academic culture"

October 6-24, 2015

The Hausdorff Center presented the award-winning exhibition "Transcending Tradition" about the life and work of Jewish mathematicians at the Poppelsdorfer Schloss in October. Curator Birgit Bergmann (University of Frankfurt), Dr. Klaus Kinkel, Katja Dörner, Ulrich Kelber, and Abraham Lehrer, the vice president of the Central Council of Jews in Germany, gave talks at the exhibition opening. Several school classes participated in free guided tours by our PhD student Felix Boes. A short movie about the exhibition in Bonn is available on our **YouTube channel**.

Inauguration of the "Hausdorff School for Advanced Studies in Mathematics"

20. Oktober 2015

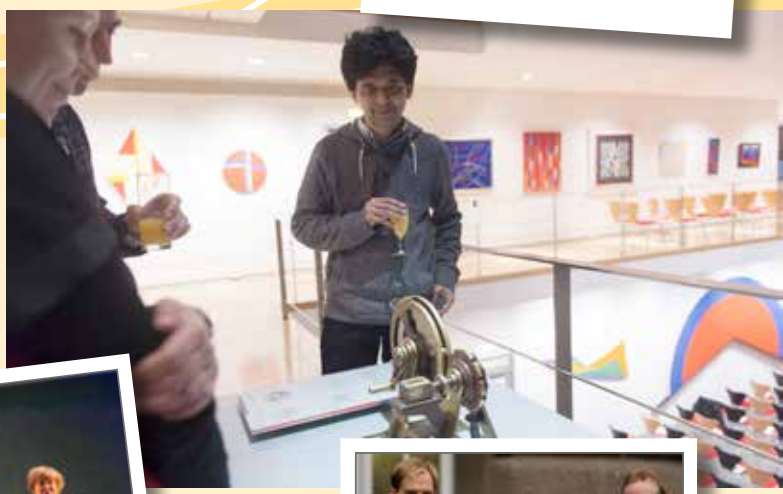
On October 20 we celebrated the official inauguration of the "Hausdorff School for Advanced Studies in Mathematics". The Hausdorff School is a innovative new program for postdocs, that is specifically tailored to train young scientists systematically for research, teaching, and positions outside of academia. The Hausdorff School aims at improving the quality of university teaching and at counteracting the shortage of qualified experts in STEM. "Bonn is and will remain a fantastical place for mathematics", commented Rektor Michael Hoch on the new program at the inauguration ceremony. Videos of the event are available on our **YouTube channel** and **pictures** on our homepage.

HAUSDORFF EVENTS

“Panorama of Mathematics”

October 21-23, 2015

The long awaited international conference “Panorama of Mathematics“ took place at the Hausdorff Center in October. Seventeen internationally renowned speakers from many mathematical fields came to Bonn to celebrate the tenth year of successful progression of our cluster of excellence. In total, about 560 researchers and students from 20 nations visited the conference. “The event was a huge success. We were able to show colleagues from all over the world the full potential of Bonn Mathematics and to lay the foundations for future cooperation”, sums up HCM coordinator Karl-Theodor Sturm up. The organizing committe again thanks everyone who worked before and during the conference to make the event possible. You can watch the lectures on our **YouTube channel**. A picture gallery is available **here**.



HAUSDORFF CALENDER

Mathematics of Signal Processing
(Hausdorff Trimester Program)
January 4 to April 22

Workshop: Probability and asymptotic analysis in strongly coupled systems
January 11 to 15

Winter School on Advances in Mathematics of Signal Processing
January 11 to 15

Hausdorff Forum for Interaction with Mathematical Sciences
January 15

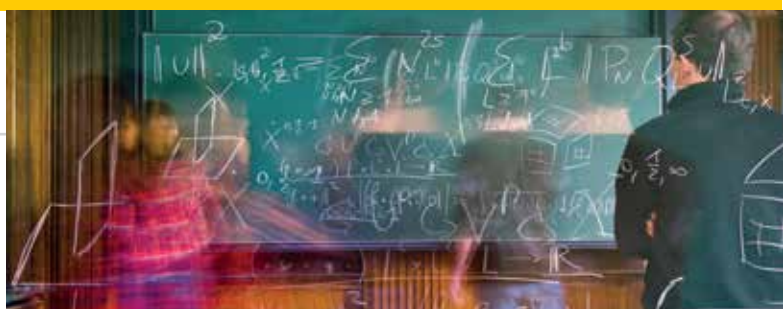
NEW LECTURE SERIES

Media training for postdocs (Hausdorff School)
January 21

Arithmetic Groups, their Cohomology and Arithmetic Applications (Hausdorff School)
January 25 to 29

Hausdorff Forum for Interaction with Mathematical Sciences
February 5

Workshop on Low Complexity Models in Signal Processing
February 15 to 19



Hausdorff cinema: „The discrete charme of geometry“
February 23

Recent developments in integral p-adic cohomology theories (HCM Workshop)
February 29 to March 3

Workshop on Harmonic Analysis, Graphs and Learning
March 14 to 18

Derived Categories: Dimensions, Stability Conditions, and Enhancements (Hausdorff School)
March 29 to April 2

Hausdorff Forum for Interaction with Mathematical Sciences
April 15

Low-rank Tensor Techniques in Numerical Analysis and Optimization (Hausdorff School)
April 18 to 22

Mathematischer Salon
April 21

HAUSDORFF MIXED

New old Board of Directors

The professor assembly on November 11, 2015 confirmed the board of directors of the Hausdorff Center. As Catharina Stroppel didn‘t run for a second term as vice-coordinator of the HCM, Daniel Huybrechts was elected to the position. Therefore, Daniel Huybrechts (Mathematical Institute) was elected as the new vice coordinator of the HCM. Karl-Theodor Sturm (Institute for Applied Mathematics) continues to be coordinator of our cluster. The other members of the board remain unchanged: Gerd Faltings (Max-Planck-Institute for Mathematics), Bernhard Korte (Research Institute for Discrete Mathematics), Sven Rady (Institute for Microeconomics), Martin Rumpf (Institute for Numerical Simulation), Stefan Schwede (BIGS) and Wolfgang Lück (HIM).

IMPRESSUM

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Person responsible: Dr. Astrid Slizewski
Photos: fotolia, Barbara Frommann, Tino Marquez, privat, Astrid Slizewski
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