Analysis day in memory of Mikael Passare

September 16, 2015

Stockholms universitet

Organizers:
Mats Andersson, Göteborg, `matsa@chalmers.se`
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ANALYSIS DAY IN MEMORY OF
MIKAEL PASSARE

SEPTEMBER 16, 2015

DEPT. OF MATHEMATICS, STOCKHOLM UNIVERSITY

Program

Rum 306, Building 6, Kräftriket

11:00–11:45 Lawrence Gruman:
*Value distribution for holomorphic mappings and
Nevanlinna theory in several dimensions.*

11:45–12:30 Ahmed Zeriahi:
Weak solutions to degenerate complex Monge-Ampère Flows

Lunch at restaurant *Kräftan*

Rum 14, Building 5, Kräftriket

13:30–14:15 Andrei Khrennikov:
Continuous and discrete models of natural and cognitive phenomena

14:15–15:00 Christer Kiselman:
One-sided regularity of lineally convex sets.

Oskar Klein lecture hall at Albanova

15:15–16:15 Gregory F. Lawler
Self-avoiding motion

This is colloquium lecture at Stockholm Mathematical Center
(Mikael was the main driving force behind SMC and colloquium)

Visit to *Norra begravningsplatsen*

18:00–20:00 **Dinner at restaurant** *Ställmästaregården*

Abstracts

Value distribution for holomorphic mappings and Nevanlinna theory in several dimensions.

Lawrence Gruman
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Nevanlinna theory for meromorphic and holomorphic mappings of one complex variable shows that for every meromorphic mapping every value is taken on asymptotically with the same frequency except for a countable number of values. As soon as one considers non-degenerate holomorphic mappings of several variables, a myriad of examples shows that the image can be very small -for instance, of finite volume or such that the complement contains an open set. The purpose of this talk is to show that there exist countable discrete sets such that the image of a non-degenerate holmoprphic map meets them with with an asymptotic frequency related to the growth of the Euclidean norm of the map.

Continuous and discrete models of natural and cognitive phenomena.

Andrei Khrennikov
Linnaeus University, Växjö-Kalmar
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This is a historical review of competitive development of continuous and discrete models of natural and cognitive phenomena, from the Greeks to Einstein-Podolsky-Rosen experiment, Bell inequality, p-adic mathematical physics, quantum-like and p-adic models of cognition and psychology, based on the monographs:

References

[1] M. Asano, A. Khrennikov, M. Ohya, Y. Tanaka, I. Yamato Quantum Adaptivity in Biology: from Genetics to Cognition. Springer, Heidelberg-Berlin-New York, 2015.

[2] A. Khrennikov, Beyond Quantum, Pan Stanford Publ., Singapore, 2014.

[3] E. Haven and A. Khrennikov, Quantum Social Science, Cambridge Press, Cambridge, 2013.

[4] A. Khrennikov, Ubiquitous quantum structure: from psychology to finances, Springer, Berlin-Heidelberg-New York, 2010.

One-sided regularity of lineally convex sets

Christer Kiselman

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If a set has a boundary of a certain smoothness, say of class C^1 or C^2, then its complement has a boundary with the same smoothness. The union of an increasing family of smoothly bounded convex set is convex, and, conversely, every convex set is the union of such a family. But the convex set itself need not have a smooth boundary. However, from the outside it is as easily accessible as a smoothly bounded set. This simple observation gives rise to the idea of studying one-sided accessibility of sets in $\mathbb{R}^m$ or $\mathbb{C}^n$.

The purpose of this talk is to study exterior accessibility of sets, in particular in relation to lineal convexity. This is about a kind of one-sided regularity: a set can be touched at any boundary point by a smooth ball from the outside but not necessarily from the inside.

Weak solutions to degenerate complex Monge-Ampère Flows.

Ahmed Zeriahi

Toulouse

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Studying the (long-term) behavior of the Kähler-Ricci flow on mildly singular varieties, one is naturally lead to study weak solutions of degenerate parabolic complex Monge-Ampère equations. The purpose of this lecture is to explain how to develop a viscosity theory for degenerate complex Monge-Ampère flows on compact Kähler manifolds. Our general theory allows in particular to define and study the (normalized) Kähler-Ricci flow on varieties with canonical singularities, generalizing results of J. Song and G. Tian. This is a joint work with P. Eyssidieux and V. Guedj (see arXiv:1407.2504).