



Analysis day in memory of Mikael Passare

October 5, 2015

Organizers:

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ANALYSIS DAY IN MEMORY OF MIKAEL PASSARE

OCTOBER 5, 2015

DEPT. OF MATHEMATICS, STOCKHOLM UNIVERSITY

Program

12:00-13:00 **Lunch** at restaurant *Kräftan*

Rum 22, Building 5, Kräftriket

13:00–13:45 Jan Boman:
Holmgren theorems for the Radon transform

13:55–14:40 Annemarie Luger:
Herglotz–Nevanlinna functions in several variables

14:50–15:35 Alan Sola:
Cyclic polynomials in anisotropic Dirichlet spaces

15:45–16:00 Christer Kiselman:
Gennadi Henkin (1942–2016). Some memories

Reception at *Lunch room* building 6

Visit to *Norra begravningsplatsen*



Abstracts

Holmgren theorems for the Radon transform

Jan Boman

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Hörmander's proof of Holmgren's uniqueness theorem was based on a microlocal regularity theorem for solutions of linear PDE:s with real analytic coefficients and the following local unique continuation theorem for distributions satisfying an analytic wave front condition. If a distribution vanishes on one side of a C^1 hypersurface $S \subset \mathbf{R}^n$ in some neighborhood of a point $x \in S$, and at least one of the conormals (x, ξ) to S at x is not in $WF_A(f)$, then $f = 0$ in some neighborhood of x . A closely related local unique continuation theorem for distributions (*A local vanishing theorem for distributions*, C. R. Acad. Sci. Paris **315** Série I (1992), 1231-1234) reads as follows. Let S be a real analytic submanifold of \mathbf{R}^n of arbitrary codimension near $x \in S$, and let f be a distribution, defined in some neighborhood of x , such that $(x, \xi) \notin WF_A(f)$ for every conormal ξ to S at x . Assume moreover that the distribution f is flat along S in the sense that the restrictions to S of derivatives of f of all orders are equal to zero. Those restrictions are well defined as distributions on S because of the wave front condition. The conclusion is that f must vanish in some neighborhood of x . This result implies unique continuation theorems for Radon transforms, wave equations, and for CR functions.

Gennadi Henkin (1942–2016). Some memories

Christer Kiselman

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Gennadi Henkin (1942–2016) was an outstanding mathematician in the field of complex analysis and geometry, working in Moscow and Paris. I will tell about my personal recollections from meeting him, especially from my visits to Moscow in 1983 and 1989.

Herglotz–Nevanlinna functions in several variables

Annemarie Luger

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We are going to report on recent developments concerning integral representations for Herglotz–Nevanlinna functions in n variables, with special emphasis on the properties of the representing measures. This talk complements the earlier seminar talk by Mitja Nedic, which covered the case $n = 2$.

Cyclic polynomials in anisotropic Dirichlet spaces

Alan Sola

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We give a complete characterization of polynomials in two complex variables that are cyclic with respect to coordinate shifts acting on weighted Dirichlet spaces over the bidisk.

This reports on joint work with G. Knese, L. Kosiński, and T. Ransford, and with C. Bénéteau, C. Liaw, and D. Seco.