Finnish Mathematical Society

SPRING 2025 COLLOQUIUM

Thursday 6 March at 16:15
On Zoom and live watch parties at universities

Nearest event:

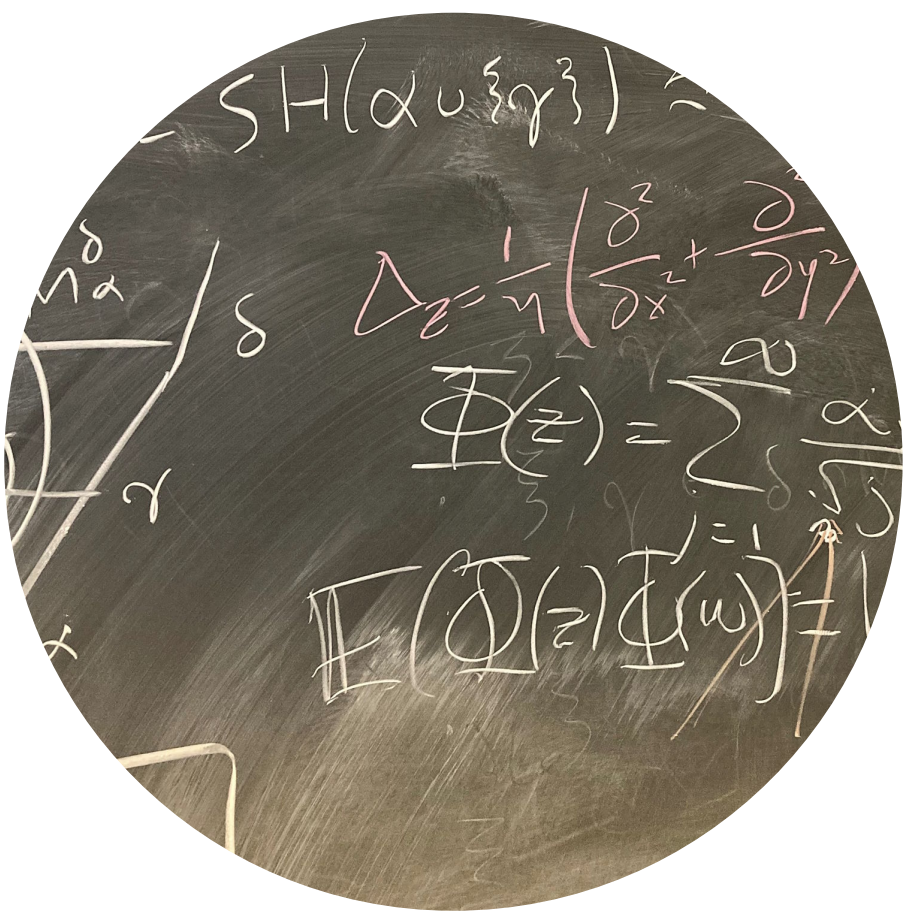
- UEF Joensuu: M107

www.matemaattinenyhdistys.fi

Håkan Hedenmalm
KTH Stockholm

Håkan Hedenmalm is Professor of Mathematics at KTH Stockholm. He has developed a habit to look at classical topics, with the aim to find something new and interesting.

Conformally invariant Gaussian analytic functions, holomorphic correlations, and operator symbols of contractions



The classical Dirichlet space of holomorphic functions on the unit disk is invariant under Möbius transformations, except that it is equipped with a marked point where the functions vanish. Associated with such a Dirichlet space with a marked point, we get a Gaussian analytic function in a canonical fashion. Then, if we take two such Gaussian analytic functions, say with the same marked point at the origin, we consider the holomorphic correlation function of the two. It turns out to be given in terms of a contraction on the area-L^2 space on the disk. More precisely, we obtain the operator symbol of the contraction. Some contractions on L^2 are perhaps more natural than others. For instance, we can consider the multiplication operator associated with a Beltrami coefficient μ. But we can also consider Grunsky operators, which are prominent in the theory of conformal mapping. We obtain a characterization of the operator symbols of Grunsky operators as solutions to a nonlinear wave equation. We also study the average growth of the L^2 means of the operator of a general contraction.

The event is chaired by Risto Korhonen (University of Eastern Finland).