Workshop dedicated to the memory of Professor Gabriela Kohr
(3rd edition)
Geometric Function Theory in Several Complex Variables and Complex Banach Spaces

Cluj-Napoca, Romania $\hfill$ 1 – 3 December 2023

Nonlinear resolvents and decreasing Loewner chains

Ikkei Hotta

Yamaguchi University, Japan

Abstract

In this talk we will discuss that nonlinear resolvents of infinitesimal generators on bounded and convex subdomains of $\mathbb{C}^n$ are decreasing Loewner chains. A special form of the Loewner differential equation obtained from this chains appears in the context of the limit of the multiple radial/chordal SLEs. Furthermore, we consider the problem of the existence of nonlinear resolvents on unbounded convex domains in $\mathbb{C}$. In the case of the upper half-plane, we obtain a complete solution by using that nonlinear resolvents of certain generators correspond to semigroups of probability measures with respect to free convolution.

The material for this talk is based on the joint work with Sebastian Schleißinger and Toshiyuki Sugawa.