

Gabriela Kohr: Subordination chains and generalized parametric representation in several complex variables.

Abstract: Joint work with Mirela Kohr.

In this talk we consider a survey of recent results related to univalent subordination chains and generalized parametric representation in \mathbb{C}^n .

In the first part of the talk, we consider the notion of a convex subordination chain (c.s.c) on the unit ball in \mathbb{C}^n .

Next, we define the notion of asymptotic spirallikeness in the Euclidean space \mathbb{C}^n . We consider the connection between this notion and (non-normalized) univalent subordination chains. We introduce the notions of A -asymptotic spirallikeness and A -parametric representation where $A \in L(\mathbb{C}^n, \mathbb{C}^n)$, and prove that if $k_+(A) < 2m(A)$, then a mapping $f \in S(B^n)$ is A -asymptotically spirallike if and only if f has A -parametric representation, i.e. if and only if there exists a univalent subordination chain $f(z, t)$ such that $Df(0, t) = e^{At}$, $\{e^{-At}f(\cdot, t)\}_{t \geq 0}$ is a normal family on B^n and $f = f(\cdot, 0)$. In particular, a spirallike mapping with respect to $A \in L(\mathbb{C}^n, \mathbb{C}^n)$ with $k_+(A) < 2m(A)$ has A -parametric representation.

In the last part of the talk, we study the solutions of the generalized Loewner differential equation on the unit ball in \mathbb{C}^n . Finally we present various applications and examples.

The talk is based on joint works with Ian Graham (Toronto), Hidetaka Hamada (Fukuoka) and John Pfaltzgraff (Chapel Hill).