

İSTANBUL ANALYSIS SEMINARS

THE GENERALIZED LOEWNER DIFFERENTIAL EQUATION IN \mathbb{C}^n : APPLICATIONS TO EXTREME POINTS AND SUPPORT POINTS FOR THE FAMILY $S^0(B^n)$

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Abstract: In this talk we survey classical and also recent results related to Loewner chains and the generalized Loewner differential equation on the Euclidean unit ball B^n in \mathbb{C}^n . We also present various applications in the study of extreme points and support points for the family $S^0(B^n)$ of mappings with parametric representation, i.e. normalized biholomorphic mappings f on B^n which can be imbedded in Loewner chains $f(z, t)$ such that $f = f(\cdot, 0)$. We also discuss the case of reachable families of biholomorphic mappings generated by the generalized Loewner differential equation on the unit ball B^n in \mathbb{C}^n . These results generalize to higher dimensions related results due to R. Pell, W.E. Kirwan, and O. Roth. Certain applications and conjectures are also considered.

This talk is based on joint work with Ian Graham (Toronto), Hidetaka Hamada (Fukuoka) and Mirela Kohr (Cluj-Napoca).

References

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- [2] I. Graham, H. Hamada, G. Kohr & M. Kohr, “Asymptotically spirallike mappings in several complex variables,” *J. Anal. Math.* **105** (2008), 267–302.
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- [4] I. Graham, H. Hamada, G. Kohr & M. Kohr, “Extremal properties associated with univalent subordination chains in \mathbb{C}^n ,” *Math. Ann.* **359** (2014), no. 1-2, 61–99.

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