Workshop dedicated to the memory of Professor Gabriela Kohr
(2nd edition)
Geometric Function Theory in Several Complex Variables and Complex Banach Spaces

Cluj-Napoca, Romania   1 – 3 December 2022

Metric approach in Geometric Function Theory

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Abstract

In this lecture we study the main relationships between various classes of mappings whose definitions rely on metric approaches and techniques: finitely bi-Lipschitz, quasisymmetric, quasimöbius and quasiconformal mappings and mappings of finite metric and of finite area distortions. The latters are the cental objects in our presentation. Although no analytic restrictions are assumed, some nice and important regularity properties (like absolute continuity on measure) are derived. We also involve classes of mappings which are called the ring, lower and hyper Q-homeomorphisms and are defined purely geometrically. The interplay between the above classes of mappings allows us to investigate the boundary correspondence problems related to the weakly flat and strongly accessible boundaries on Riemannian manifolds. Several illustrated examples are also presented.