HOLOMORPHIC MAPPINGS
REGULARITY AND FINITE DETERMINATION

One of the basic differences setting apart the analysis of several complex variables from the one-dimensional theory is the failure of the Riemann mapping theorem: There are simply connected pseudoconvex domains which are not biholomorphic to each other. This observation is the source of fascinating results concerning the rigidity and regularity of holomorphic mappings in several complex variables. We will sketch the path from early results of Poincar`e and Cartan to modern questions and will describe in detail some recent results on convergence, boundary regularity, and finite determination of holomorphic mappings in several complex variables

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Bernhard Lamel is an Austrian mathematician working in Several Complex Variables, in particular Cauchy-Riemann (CR) geometry. He obtained his PhD at the University of California at San Diego in 2000, and after postdoctoral positions at KTH Stockholm and the University of Illinois at Urbana-Champaign, he returned to his native country and joined the University of Vienna on what was to become a tenure-track position. He is currently on leave from the professorship for Complex Analysis at the Faculty of Mathematics at the University of Vienna and active as Professor of Mathematics and Director of the Division of Arts and Sciences at Texas A&M University at Qatar. His main research interests are questions regarded to the structure of sets of holomorphic mappings respecting real objects in complex spaces. Questions regarding the boundary regularity and finite determination of such maps have fascinating connections to problems in dynamical systems, algebraic geometry, and functional analysis alike.