
Workshop dedicated to the memory of Professor Gabriela Kohr
(4th edition)

Geometric Function Theory in Several Complex Variables and Complex Banach Spaces

Cluj-Napoca, Romania

November 29 – December 1, 2024

Faber-Tietz forms and series on Riemann surfaces

Eric Schippers

University of Manitoba, Canada

Abstract

Faber polynomials are polynomials associated to a conformal map onto a planar domain. It is classical that one can approximate holomorphic functions on the complement of this domain by series of Faber polynomials, and there is a well-developed theory of Faber series in various analytic settings. Results on approximation in the Bergman space norm by Faber series are surprisingly recent and hold precisely for quasicircles. Based on work of H. Tietz, we generalize Faber polynomials and Faber series to compact Riemann surfaces with conformal maps onto quasidisks, and show that one-forms on the complement have a convergent Faber-Tietz series in L^2 . Joint work with M. Shirazi.