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Algebraic and geometric aspects of rational Γ-inner functions

Abstract

The set

$$\Gamma \stackrel{\text{def}}{=} \{(z+w, zw) : |z| \leq 1, |w| \leq 1\} \subset \mathbb{C}^2$$

has intriguing complex-geometric properties; it has a 3-parameter group of automorphisms, its distinguished boundary is a ruled surface homeomorphic to the Möbius band and it has a special subvariety which is the only complex geodesic that is invariant under all automorphisms. We exploit this geometry to develop an explicit and detailed structure theory for the rational maps from the unit disc to Γ that map the boundary of the disc to the distinguished boundary of Γ.

The talk is based on joint work with Jim Agler and Nicholas Young.

[1] Jim Agler, Zinaida A. Lykova and N. J. Young: Algebraic and geometric aspects of rational Γ-inner functions, (arXiv: 1502.04216 [math.CV] 17 Febr. 2015) 22 pp.

Talk time: 7/21/2016 2:30PM— 7/21/2016 2:50PM
Talk location: Cupples I Room 115

Special Session: Function spaces. Organized by J. McCarthy.