Analysis Seminar

Title: Properties of Abel universal functions

Speaker: Konstantinos Maronikolakis

Date: Tue 25th April 2023 at 3:00PM

Location: Seminar Room SCN 1.25

Abstract: In general, an object is called universal, if it can approximate through some specific process, every element of a given space. In this talk, I will focus on the class of Abel universal functions which are holomorphic functions on the unit disk whose radial limits uniformly approximate all possible continuous functions on compact subsets of the unit circle. More precisely, given an increasing sequence $\rho = (r_n)$ in $[0, 1)$ tending to 1, a holomorphic function f on the open unit disk is an Abel universal function (with respect to ρ) if for any compact set K on the unit circle, different from the unit circle, the set of functions $\{f(r_n \cdot)|_K : n \in \mathbb{N}\}$ is dense in the space of continuous functions on K. I will discuss properties of Abel universal functions and in particular their similarities and differences with the universal Taylor series, which are well studied in the field of universality.

Joint work with Stéphane Charpentier and Myrto Manolaki.

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