

Title: An extremal problem for characteristic functions

Joint work with S. Garcia, W. ross and D. Timotin.

Abstract: Suppose E is a subset of the unit circle \mathbb{T} and $H^\infty \subset L^\infty$ is the Hardy subalgebra. We examine the problem of finding the distance from the characteristic function of E to $z^n H^\infty$. Precise solutions are given in several important cases. The techniques used involve the theory of Toeplitz and Hankel operators as well as the construction of certain conformal mappings.