

Analysis Seminar Thursday May 2, 2013

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Title: *New (and classical) Hilbert function spaces of holomorphic functions on the (right) half-plane*

Abstract: This talk is a report on an on-going project in collaboration with M. Salvatori. We quickly review the Hardy space H^2 on the half-plane in the 1-dimensional complex plane and its connection with the Muntz-Szasz for theorem for $L^2[0, 1]$. Next we introduce the Muntz-Szasz problem for the Bergman space A^2 on the unit disk in \mathbb{C} . In order to study this problem we introduce a new transform, that we call the Mellin-Bergman transform. The action of this transform on the Bergman space A^2 leads to the definition of new function spaces on the (right) half-plane in \mathbb{C} . Then we study these spaces, the mapping properties of the Mellin-Bergman transform, their reproducing kernel, and in particular their zero sets.