Interpolation Schemes in Bergman spaces with logarithmically superharmonic weights

Daniel H. Luecking

Feb 5, 2015

Abstract

Given a (quasi-)Banach space A of analytic functions on the unit disk \mathbb{D} and a sequence space X, a sequence $\mathcal{Z} = \{z_1, z_2, \ldots\}$ in \mathbb{D} is called an *interpolating sequence* if for every $(c_n) \in X$ there is a function $f \in A$ such that $(f(z_n)) = (c_n)$. For a given space A, an *interpolation scheme* is essentially a choice of sequence space X.

I will characterize interpolating sequences for weighted Bergman spaces on the unit disk \mathbb{D} , where the weight has the form $e^{-\varphi}/(1-|z|^2)$ and φ is a subharmonic function for which there exists positive constants m and M such that

$$m \le (1 - |z|^2)^2 \Delta \varphi(z) \le M, \quad z \in \mathbb{D}.$$

. .

These weights and the interpolation schemes I will consider are general enough to subsume most previous results on interpolating sequences for Bergman spaces on the unit disk.