

Distances from Bloch functions to some Möbius invariant function spaces in the unit ball of \mathbb{C}^n

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Abstract. Distance formulae from Bloch functions to some Möbius invariant function spaces in the unit ball of \mathbb{C}^n such as Q_s spaces, little Bloch space \mathcal{B}_0 and Besov spaces B_p are given.

1. Introduction

Let B be the unit ball of \mathbb{C}^n with boundary S , let $d\nu$ denote the Lebesgue measure on B such that $\nu(B) = 1$ and let $d\sigma$ be the rotation invariant positive normalized measure on S , i.e. $\sigma(S) = 1$. Let $d\lambda(z) = (1 - |z|^2)^{-(n+1)} d\nu(z)$. Then $d\lambda$ is Möbius invariant. For $\alpha > -1$, the weighted Lebesgue measure $d\nu_\alpha$ is defined by

$$d\nu_\alpha(z) = c_\alpha(1 - |z|^2)^\alpha d\nu(z),$$

where

$$c_\alpha = \frac{\Gamma(n + \alpha + 1)}{n!\Gamma(\alpha + 1)}$$