ESSENTIAL NORM ESTIMATES FOR LITTLE HANKEL OPERATORS ON $L_a^2(\mathbb{C}_+)^*$

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Abstract

In this paper, we give estimates for the essential norm of a bounded little Hankel operator defined on the Bergman space of the right half plane. As an application of these estimates, we also give a necessary and sufficient condition for the little Hankel operator to be compact.

MSC: 47B35, 30H20.

keywords: Bergman space; right half plane; essential norm; little Hankel operators; automorphism.

1   Introduction

Let $\mathbb{C}_+ = \{s = x + iy \in \mathbb{C} : \operatorname{Re} s > 0\}$ be the right half plane. Let $d\mu(s) = dxdy$ be the area measure. Let $L^2(\mathbb{C}_+, d\mu)$ be the space of complex-valued, square-integrable, measurable functions on $\mathbb{C}_+$ with respect to the area measure. Let $L_a^2(\mathbb{C}_+)$ be the closed subspace [1] of $L^2(\mathbb{C}_+, d\mu)$ consisting of those functions in $L^2(\mathbb{C}_+, d\mu)$ that are analytic. The space $L_a^2(\mathbb{C}_+)$ is referred to as the Bergman space of the right half plane. The functions

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