HARMONIC HARDY SPACE AND THEIR OPERATORS

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Abstract. Let $H^2$ be the Hardy space on the unit disk. For inner functions $u$ and $v$, the harmonic Hardy space $H^2_{u,v}$ is defined by $H^2_{u,v} = uH^2 \oplus vzH^2$. Assume one of $u$ and $v$ is a nonconstant, then $H^2_{u,v}$ is a proper closed subspace of $L^2(\partial D)$. We can define the Toeplitz operator on $H^2_{u,v}$ by $\hat{T}_f x = Qfx$ for $x \in H^2_{u,v}$, where $Q$ is the orthogonal projection from $L^2(\partial D)$ onto $H^2_{u,v}$. We studied some algebraic properties of the Toeplitz operator on $H^2_{u,v}$ and obtained some interesting results that are different from the Toeplitz operators in the classical function space.


Keywords and phrases: Harmonic Hardy Space, Toeplitz operator, Hankel operator.

REFERENCES


