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Composition C^* -algebras Induced by Linear-fractional Non-automorphism Self-maps of the Unit Disk

Abstract

If φ is an analytic self-map of the unit disk \mathbb{D} , then the composition operator $C_\varphi : f \mapsto f \circ \varphi$ is a bounded operator on the Hardy space $H^2(\mathbb{D})$. We are particularly interested in composition operators induced by linear-fractional self-maps of \mathbb{D} . Several authors have investigated the structures of C^* -algebras generated by these operators and either the unilateral shift or the ideal of compact operators on $H^2(\mathbb{D})$. For non-automorphism self-maps of the disk, these structure results have required restrictions on the behavior of the inducing maps on the unit circle. In this talk, we relax these restrictions and investigate the structures of C^* -algebras generated by the ideal of compact operators and arbitrary finite collections of composition operators induced by linear-fractional, non-automorphism self-maps of \mathbb{D} .

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