

COMMUTATOR OF COMPOSITION OPERATORS ON THE HARDY SPACE

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ABSTRACT. We characterize the compactness of the linear fractionally induced commutator

$$C_{\psi}^* C_{\varphi} - C_{\varphi} C_{\psi}^*$$

in terms of the function theoretic properties of φ and ψ . We show that in the automorphic case the commutator is compact if and only if φ and ψ are simple rotations of the unit disc. On the other hand, when one of the inducing maps is not an automorphism of the disc, we show that the commutator is non-trivially compact if and only if the inducing maps are both parabolic with the same boundary fixed point or they are both hyperbolic with the same boundary fixed point and their other fixed points are conjugate reciprocals. This is a joint work with John Clifford and David Levi.

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