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Weighted composition operators from Banach spaces of analytic functions into Bloch-type spaces

Abstract

Let X be a Banach space of analytic functions on the unit disk \mathbb{D} whose point evaluation functionals are continuous. We study weighted composition operators from X into Bloch type spaces. Imposing certain natural conditions on X we are able to characterize all at once the bounded and the compact operators as well as in many cases give estimates or precise formulas for the essential norm. One condition used is:

(VI) There exists $C > 0$ such that $\|Sf\| \leq C\|f\|$, for all f in X and for all disk automorphisms S .

When X is either the Bloch space or the space of analytic functions, S^p , whose derivatives are in the Hardy space H^p though, (VI) fails. So when X is continuously contained in the Bloch space, we impose two other conditions on the norm of the point evaluation functionals. In the end our results apply to known spaces that include the Hardy spaces, the weighted Bergman spaces, $BMOA$, the Besov spaces and all spaces S^p . This is joint work with Flavia Colonna.

Talk time: 7/21/2016 3:30PM— 7/21/2016 3:50PM

Talk location: Cupples I Room 115

Special Session: Function spaces. Organized by J. McCarthy.