

Composition Operators on generalized Bergman Spaces

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Abstract

Recently, composition operators on spaces of holomorphic functions have been widely investigated by several authors (among others Bourdon, Cowen, MacCluer, Shapiro). In the present talk we study a class of Hilbert spaces of analytic functions on the punctured plane, namely the spaces of holomorphic functions which are square integrable with respect to a given weight (the so-called generalized Bergmann spaces). We investigate the structure of such spaces and we determine in which cases they are finite-dimensional. Moreover we study which are the composition operators acting on generalized Bergman spaces, with a particular attention to the action of S^1 on these spaces, and we give a classification of their cyclicity and hypercyclicity properties.