

Hankel Operators on the Bergman Space and Similarity to Contractions

Olivia Constantin

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In the first part of this paper we consider Foguel-Hankel operators on vector-valued Bergman spaces. These operators, when acting on Hardy spaces, play a central role in the famous example by Pisier of a polynomially bounded operator which is not similar to a contraction. When acting on Bergman spaces, they have a very different behaviour and we provide complete characterizations of power boundedness, polynomial boundedness and completely polynomial boundedness for this class of operators. In the second part of the paper we prove an atomic decomposition theorem for vector-valued weighted Bergman spaces. As an application, we determine the dual of certain trace class-valued Bergman spaces.