

1086-32-1601

Vladimir Bolotnikov* (vladi@math.wm.edu), Williamsburg, VA 23185-8795, and **Joseph A Ball** (joball@math.vt.edu), Blacksburg, VA 24061. *Shift-invariant subspaces, inner functions and related linear systems: the weighted Bergman space setting.*

Subspaces of the Hardy space of the unit disk which are invariant under the backward shift appear as the ranges of observability operators associated with a discrete-time-invariant linear system as well as the functional-model space for a Hilbert space contraction, while forward shift-invariant subspaces admit representations in terms of inner functions which can be written in terms of transfer-function realizations. Extensions of these results to the multi-variable setting of the Druri-Arveson space are also known. In the talk, we will discuss several extensions to the setting of standard weighted Bergman spaces of the unit ball. (Received September 23, 2012)