RESEARCH ANNOUNCEMENTS

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SIMILARITY OF CANONICAL MODELS

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1. **Introduction.** In the last decade, Sz.-Nagy and Foiaş [4], [7] and de Branges and Rovnyak [1], [2] have developed general structure theories for contraction operators on Hilbert space based on the notion of a canonical model. In each of these theories the canonical model for a completely nonunitary contraction T is a representation of T as a formally simple operator acting on a possibly complicated space. Associated with each canonical model is an operator valued analytic function called the characteristic operator function of the model. One of the general problems of model theory is to discover how properties of T are reflected in the characteristic operator function of its model. Our main result (Theorem 2) is a solution (in this sense) of the problem of similarity of two canonical models in the special case when the associated characteristic operator functions are *complex valued*. Our main tool is the Sz.-Nagy and Foiaş lifting theorem for intertwining maps (see [3], [8]).

2. **The main results.** Suppose that N_1 and N_2 are Hilbert spaces. $\mathfrak{L}(N_1, N_2)$ denotes the Banach space of (bounded linear) operators from N_1 to N_2. If $T_i \in \mathfrak{L}(N_i, N_i)$ $(i=1, 2)$, we denote by $\mathfrak{I}(T_1, T_2)$ the subspace of intertwining maps from T_1 to T_2, i.e., $\mathfrak{I}(T_1, T_2) = \{X \in \mathfrak{L}(N_1, N_2): XT_1 = T_2X\}$.

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