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**Daoxing Xia\*** (xiad@math.vanderbilt.edu), Department of mathematics, Vanderbilt University, Nashville, TN 37240. *Analytic model of some operators with finite rank of self-commutators*. Preliminary report.

We study a class  $F$  of operators  $A$  on a Hilbert space  $H$  satisfying the following conditions: (1) the rank of the self-commutator of  $A$  is finite, and (2) there is a finite dimensional subspace of  $H$  which contains the range of the self-commutator as a subspace and is invariant with respect to the conjugate of  $A$ . An analytic model of the operator  $A$  in  $F$  is established. In this model the operator is a multiplication operator on an analytic function space on a union of some quadrature domains in a finite Riemann surface. The conjugate of  $A$  is a finite rank perturbation of a multiplication operator multiplied by the Schwarz functions of these quadrature domains. We also give a more concrete model for operators in some subclass of  $F$ . (Received September 07, 2000)