

Meeting: 999, Nashville, Tennessee, SS 7A, Special Session on Operator Theory on Function Spaces

999-47-8 **Daoxing Xia*** (daoxingxia@netscape.net), Department of Mathematics, Vanderbilt University, Nashville, TN 37240. *Spectral analysis of operators of finite type*. Preliminary report.

An operator A on a Hilbert space is said to be of finite type, if there is a finite dimensional subspace K containing the range of the self-commutator of A and satisfying the condition that K is invariant with respect to the adjoint of A . In this talk, we will introduce the quadrature domains on a Riemann surface associated with an operator of finite type and a positive matrix-valued measure on the projection of the boundary of those quadrature domains. This measure is an analogue of the positive operator-valued measure in the theory of analytic model of subnormal operators. By means of this measure, under certain condition, an operator of finite type is unitarily equivalent to the multiplication operator on some modified Hardy space of analytic functions. We also construct a mosaic for some operator of finite type. A formula related to the Brodskii-Lifshitz kernel and the eigen function kernel of the operator of finite type is also established. (Received April 22, 2004)