1019-47-169 **Stefan Richter*** (`richter@math.utk.edu`), Department of Mathematics, University of Tennessee, Knoxville, TN 37996. *Two-Isometric d-tuples of commuting operators.* Preliminary report.

Let $d \geq 1$ and let $T = (T_1, ..., T_d)$ be a d-tuple of commuting operators on a Hilbert space $\mathcal{H}$. T is called a spherical isometry, if $\Delta_1 = \sum_{j=1}^{d} T_j^* T_j - I = 0$. For $k > 1$ we inductively define $\Delta_k = \left(\sum_{j=1}^{d} T_j^* \Delta_{k-1} T_j\right) - \Delta_{k-1}$, and we say that T is a k-isometric d-tuple, if $\Delta_k = 0$. Examples of d-isometric d-tuples are given by multiplication by the coordinate functions $M_z = (M_{z_1}, ..., M_{z_d})$ on the Drury-Arveson space H_d^2 and on all of its invariant subspaces. H_d^2 is defined by the reproducing kernel $k_\lambda(z) = (1 - \langle z, \lambda \rangle)^{-1}$ on the unit ball of $\mathbb{C}^d$. If $d = 1$, then the classical Dirichlet shift is a 2-isometry.

In this talk I will present a model theorem for certain 2-isometric d-tuples. (Received August 14, 2006)