1077-47-558 **Michael T Jury*** (`mjury@ufl.edu`), Department of Mathematics, University of Florida, PO Box 118105, Gainesville, FL 32611-8105. *"Noncommutative" Aleksandrov-Clark measures and function theory in the unit ball.* Preliminary report.

Let $\mathcal{S}$ denote the set of functions b, holomorphic in the unit ball of $\mathbb{C}^d$, such that the kernel $(1-b(z)\overline{b(w)})(1-\langle z,w\rangle)^{-1}$ is positive, and write $\mathcal{H}(b)$ for the corresponding reproducing kernel Hilbert space. In one variable these are known as the *de Branges-Rovnyak spaces*. Their theory is well-developed; the central objects are the backward shift operator on $\mathcal{H}(b)$ and the Aleksandrov-Clark (AC) measure μ.

The natural analog of the AC measure in the multivariable setting is a certain positive linear functional on a (non-commutative) operator system. The next difficulty is to understand what should be meant by "backward shift." We introduce a canonical solution to the Gleason problem in $\mathcal{H}(b)$ which preserves many features of the backward shift in the one-variable setting, and identify a subclass of $\mathcal{S}$ called *quasi-extreme* functions. (In one variable, these are the extreme points of the unit ball of H^∞.) As an application we obtain a version of Clark's theorem on rank-one perturbations of the backward shift, and some further function-theoretic results. (For example, $\mathcal{H}(b)$ is z_j-invariant for each $j=1,\dots d$ if and only if b is not quasi-extreme.) (Received September 07, 2011)