Michael Jury

University of Florida

Extremal multipliers of the Drury-Arveson space

Abstract

(This is joint work with Robert T. W. Martin.) We introduce a family of multipliers on the Drury-Arveson space H_d^2 which we call *quasi-extreme*. To each contractive multiplier b is associated a de Branges-Rovnyak space $\mathcal{H}(b)$ with kernel

$$k^b(z, w) = \frac{1 - b(z)b(w)^*}{1 - zw^*}$$

In one variable, the theory of $\mathcal{H}(b)$ spaces splits into two streams, one for b which are extreme points of the unit ball of $H^\infty(\mathbb{D})$, and the other for non-extreme points. We show that there is an analogous splitting in the Drury-Arveson case, between the quasi-extreme and non-quasi-extreme cases. (In one variable the notions of extreme and quasi-extreme coincide.) We give a number of equivalent characterizations of quasi-extremity, and prove that if b is quasi-extreme then b is an extreme point of the unit ball of the multiplier algebra of H_d^2, and conjecture that the converse holds. A key tool is the analysis of contractive d-tuples of operators which solve the Gleason problem in $\mathcal{H}(b)$.

Talk time: 07/18/2016 3:00PM— 07/18/2016 3:20PM
Talk location: Crow 206

Special Session: Multivariable operator theory. Organized by H. Woerdeman.