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Greg Knese* (geknese@math.wustl.edu), Washington University in St. Louis, Department of Mathematics, One Brookings Drive, Campus Box 1146, St. Louis, MO 63130. *Hilbert spaces associated to bounded analytic functions on the bidisk and applications to stable polynomials.*

We will discuss how recent results regarding Agler decompositions for bounded analytic functions on the bidisk can yield information about various classes of stable polynomials. In particular, Agler decompositions yield sums of squares formulas which yield determinantal representations for a special class of polynomials from optimization called hyperbolic polynomials. Recent work with J. Geronimo and P. Iliev as well as work with K. Bickel will play a key role. (Received January 24, 2014)