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Towards a classification theory for constrained row contractions.

Allowing for operator-valued analytic functions, it is known that certain abstract row contractions can be classified up to unitary equivalence using concrete multiplication operators. If we are willing to settle for a less faithful description, then we may hope to construct simpler, scalar-valued functional models. For single contractions satisfying an analytic constraint, this vision has been fulfilled and has culminated in a powerful classification theorem.

The aim of this talk is to explore potential extensions of this theorem to the multivariate world. On one hand, we exhibit some higher-dimensional difficulties and identify crucial univariate facts that simply fail to hold in several variables. On the other hand, we explain how interpolating sequences can be exploited to obtain a satisfactory classification for commuting row contractions satisfying appropriate analytic constraints. (Received July 18, 2018)