RAPHAEL CLOUATRE, University of Manitoba

Absolute continuity for commuting row contractions

Absolutely continuous Hilbert space contractions admit a functional calculus which is weak-$*$ continuous. Over the years, this finer continuity property has been exploited with great success to tackle a variety of important problems. At the root of this success is the fact that absolutely continuous contractions can be understood through the dual space of the disc algebra $A(\mathbb{D})$.

Turning to the topic of multivariate operator theory, we investigate the analogous notion of absolutely continuous commuting row contractions, and provide a complete characterization for it in measure theoretic terms. On the surface, the statements of our results are reminiscent of the corresponding classical single variable theorems. However, the underlying operator algebra $\mathcal{A}_d$ consists of multipliers on the Drury-Arveson space, and thus is vastly different from $A(\mathbb{D})$. In particular, it is not a uniform algebra. We highlight the new tools that must be used to circumvent this difficulty. (joint work with Ken Davidson)