

Free Probability Based Optimizations: Capacity of Multiantenna Communication Systems

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Abstract: In the past, free probability has been used to compute the asymptotic capacity of multiantenna communication systems. In those applications, the optimization domain involved in capacity computation was reduced to a single point using information theoretic arguments. In this talk we will show that for a certain class of multiantenna channels we can perform a non-trivial optimization using operator-valued free probability tools. This is joint work with Víctor Pérez-Abreu.