GRADUATE SEMINAR

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The Bures Contractions on Tracial C*-Algebras

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Math Lounge (307.20)

Abstract In a unital C*-algebra $\mathcal{A}$ with a faithful trace functional τ, the Bures metric is one of the many interesting metrics that exists on the set $\mathcal{D}_\tau(\mathcal{A})$ of positive $\rho \in \mathcal{A}$ of trace $\tau(\rho) = 1$, which is an analogue of the space of density matrices. In this talk, I will analyse positive trace preserving linear maps that are strict contractions on $\mathcal{D}_\tau(\mathcal{A})$ with respect to the Bures metric. It turns out that such maps are found in abundance in the set of positive trace preserving linear maps. The various results obtained for such maps on C*-algebras will be then used to demonstrate some applications in quantum information theory.

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