CONTINUITY OF QUANTUM ENTROPIC QUANTITIES VIA ALMOST CONVEXITY

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ABSTRACT. Quantum divergences appear ubiquitously in quantum information theory to describe various ways of measuring how distinguishable two quantum states are. These quantities are generally continuous, although specific continuity bounds are frequently unknown. In this talk, we will introduce a new method to explore the uniform continuity of certain quantum divergences under the requirement that they satisfy some desirable form of almost concavity. This will allow us to generate a plethora of new continuity bounds for certain quantum entropic quantities, which can be applied in numerous contexts, ranging from quantum hypothesis testing to approximate quantum Markov chains, among others.

REFERENCES

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