

ATELIER « INFORMATION QUANTIQUE : CODES, GÉOMETRIE ET STRUCTURES ALÉATOIRES »
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WORKSHOP ON QUANTUM INFORMATION: CODES, GEOMETRY AND RANDOM STRUCTURES
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Exponential rates via Banach space tools

Marius Junge*
junge@math.uiuc.edu

Our motivation is to study the well-known equality $2Q_E = C_E$ about capacity with unlimited entanglement. We show that behind this equality is a dimension count of faithfully transmitted states of finite dimensional C^* -algebras. We also prove the corresponding exponential estimates below the rate. Our method relies on a cool connection between Shannon's capacity and Grothendieck's work on summing maps in Banach spaces. This connection also allows us to formulate results for limited entanglement and the corresponding additivity conjecture.

This is joint work with with Carlos Palazuelos.

*Department of Mathematics, University of Illinois at Urbana-Champaign, 1409 West Green Street, Urbana, IL 61801, USA.