Analysis Seminar

“Rényi relative entropies and noncommutative Lp-spaces”

By

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Abstract: **The standard version of quantum Rényi relative entropies is already well established and has a number of applications.
In the last couple of years, a new, so called sandwiched version was defined for density matrices and gained attention for its usefulness in quantum information theory. We propose an extension of these quantities to normal positive functionals on arbitrary von Neumann algebras, using interpolating families of noncommutative Lp-spaces with respect to a state, studied by Kosaki. We discuss the relation to a similar definition by Berta et al. and prove some properties, in particular monotonicity with respect to quantum channels and the relation to Araki relative entropy. We also show that preservation of the sandwiched Rényi entropy characterizes quantum channels that are reversible with respect to a pair of normal states.**

Date: Tuesday, May 7, 2019

Time: 16:00-17:00

Place: Mathematics Seminar Room, SA – 141

Tea and cookies will be served before the seminar.