ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

Transportation inequalities for Brownian rough paths

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Chaired by Verena Schwarz | Department of Statistics

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ABSTRACT

We consider two different ways to compare probability measures: optimal transportation cost (or Wasserstein distance) on the one hand, and relative entropy (or Küllback-Leibler divergence) on the other. An inequality between these quantities holds, for example, when the reference measure is a standard Gaussian on Euclidean space, or the law of a Brownian motion.

We lift this inequality to the space of rough paths; i.e. we consider the law of Brownian motion taken together with its Lévy area. Such a process takes values in a sub-Riemannian non-commutative group. We present two approaches to the proof that reveal phenomena not present in the Euclidean case.

This is joint work with Peter Friz, Helena Kremp, Vaios Laschos, and Matthias Liero.

We hope to see you there!