Recent Results on the Interplay between Information Theory and Stochastic Geometry

François Baccelli Inria – Équipe TREC Paris-Rocquencourt

This talk will give a survey of recent results on the interplay between the theory of spatial random processes and Informations Theory that were obtained in the IT_SG_WN project.

The first part of the lecture will be focused on the use of stochastic geometry in the Euclidean plane to analyze macroscopic properties of Network Information Theory channels.

The second part will revisit Shannon's capacity and error exponents in terms of random geometric objects living in Euclidean spaces with dimension tending to infinity.