

Random forests, local equilibria and Markovian spectra

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Abstract:

Starting from a theorem of Michelli and Willoughby that allowed Fill and Miclo to describe Markovian absorption processes as a sequence of local equilibria, we will see how some loop-erased random walks make a bridge between the spanning forest of a graph and the spectrum of its Laplacian. We will give more examples of the links between these two sets, introducing in particular a fragmentation and coalescence process that allows for the study of this spectrum from a probabilistic point of view. This is based on joint works with Luca Avena, Matteo Quattopani, Fabienne Castell and Clothilde Mélot.