

Inn'formal Probability Seminar

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“Locally Markov chains”

Abstract

Locally Markov chains can be seen as a generalization of many different processes such as rotor walks, p -walks and also ordinary Markov chains. In contrast to a Markov chain, for which the evolution of a process is independent of the past, locally Markov chains do not exhibit such nicely behaved time evolutions. However, a locally Markov chain does not depend on the whole past, but only on the past behaviour at the current location of our particle.

While several examples of locally Markov chains have been studied to varying degree in the past, the concept of a universal definition of the local dependence on the past in the form of locally Markov chains is a new concept.

In the presentation I will give a short introduction into the definition of locally Markov chains and an overview of the general behaviour of locally Markov chains, such as the existence of stationary distributions and recurrent configurations. I will also talk about a special type of locally Markov chain - uniform unicycle walks - and a result concerning the eigenvalues of the uniform unicycle walk on the complete graph.

Monday | 23.01.2023 | 16:15

SR 609 | civil engineer building