

Seminário de sistemas dinâmicos e estocásticos

IMECC - UNICAMP

Título: How a random walk turns into a swiss cheese: towards a conjecture .

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Resumo:

In 2001 Michiel van den Berg, Erwin Bolthausen and Frank den Hollander studied the downward deviation of the volume of the range of a Wiener sausage. In other words they studied the asymptotics of the probability that the volume of the range of the Wiener sausage is of a smaller order than it typically should be. They derived a precise formula for the limit of these probabilities. In the same work they conjecture that the best strategy for the Wiener sausage to reach a smaller volume is to behave like a swiss cheese, i.e., visit most of the points but leave some holes of random sizes. Hence, the range of the Wiener sausage should look like a swiss cheese. Recently with my co-authors Julien Poisat and Marcos Vinicius Araújo Sá we started towards proving this conjecture for the discrete counterpart, namely the simple random walk. We conjecture that a different model that has attracted much attention recently should play a key role, the model of random interlacements. In this talk I will introduce and explain all the objects involved and will tell about the progress we have made.