

SEMINÁRIO DE SISTEMAS DINÂMICOS

A construction of the Brownian Motion

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Abstract. Let $(\Omega, \mathcal{F}, \mathbb{P})$ be a probability space. A stochastic process $B(t, \omega)$ is a measurable function on the product space $[0, \infty) \times \Omega$. The Brownian motion is one of the most interesting process thanks to its richness in properties in several aspects. In literature there are many different equivalent ways of constructing this abstract function. Today, we are going to use the idea of how to make this construction via Markov processes. Besides, this choice is the most interesting from the point of view of the dynamics of the continuous trajectories.