

Good integrators and stochastic integration in spaces of distributions

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This talk develops some aspects of stochastic integration for stochastic processes taking values in the dual of a nuclear space (of which the classical spaces of distributions are a particular example).

We start by introducing some of the particularities found in the construction of the stochastic integral in the context of duals of nuclear spaces. In this setting, we explore the concept of semimartingales which are good integrators and provide characterizations and several examples. Then, we explain the construction and basic properties of the stochastic integral. We finalize our talk with an application of our theory to Üstünel's version of Itô's formula involving distributions.

Keywords: semimartingale, stochastic integral, spaces of distributions

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