

The work is devoted to the properties of the continuous random processes with a compact index set that are having finite quadratic variation. In the thesis we define the stochastic Riemannn integral and then follow a development of a theory leading to deriving of Ito formula. The terms, concretely quadratic variation and Ito's formula and in the process are introduced using the konvergence in probability for the continuous random processes. The applied part of the thesis, starting in chapter 6, is considering an investor trading on the stock market. Using the Ito formula we will show that both the Black-Sholes and the bachelier models are modelling the fair price of the European call vanilla option, when the price of the share on the market is modelled by.