We present the option pricing method which gives approximate formulas that are easy to implement and very accurate. The approach exploits a path-wise comparison property of strong solutions of stochastic differential equations. We show how this method works for a class of financial markets with stochastic volatilities (CEV models). Another approach describes option price bounds by means of market completions. In the framework of incomplete multivariate diffusion and jump-diffusion market models we develop a dual theory of option pricing.

It is well-known that many financial market models do not allow for explicit calculations and they are not accurate enough for the real-world applications. That is why the problem of finding and/or approximation of the acceptable range of option prices becomes very important from both theoretical and practical points of view. We consider two methods to solve this important problem.