

The deterministic theory of graphs and networks is used successfully in cases where no random component is needed. However in practice, a number of decision-making and conflict situations require the inclusion of a stochastic element directly into the model. The objective of this thesis is the introduction of stochastic optimization and its application on random networks. The reader will become familiar with three approaches to stochastic optimization. Namely two-stage optimization, multi-stage optimization and chance constraint optimization. Finally, the studied issue is demonstrated on a real telecommunication network example.