

The thesis deals with an associative and causal relationship between two different random phenomena and presents basic statistical methods for investigation of these relationships. Firstly it focuses on demonstrating the association between phenomena and shows that finding a causal relation between phenomena requires appropriate randomization of the system or intervention in the system. After intervening in the system, it is no longer possible to observe all situations, so-called counterfactual observation, but the causal relationship can still be demonstrated using appropriate technical procedures and theoretical assumptions. The thesis further summarizes different ways of representation of causal structures, first by means of graphs, where basic methods of estimating the causal structure are presented, and later by structural equations that already capture the quantitative measure of causal relations.