

This work compares localization techniques used in mobile robotics. Localization – how to determine one's own position within a space – is one of the fundamental challenges of robotics. The introduction is devoted to a detailed description of localization and to the categorization of localization techniques. In subsequent chapters, category by category, various localization techniques and their variants are described and their strengths and weaknesses are compared. The work successively addresses: probabilistic localization techniques used for inaccurate sensor measurements processing and for providing reliable position estimate; relative localization techniques used for evaluation of relative changes in the robot position; and absolute localization techniques for finding and estimating the absolute position of the robot in the environment.