

Abstract

The main goal of the thesis is to create an accurate model of the current state of water quality modelling in the river basin. The basin of the Olšava River, as found in the bachelor thesis “Analysis of Water Quality in the Basin”, is polluted with large concentrations of total phosphorus P_{Tot} . The master thesis analyses sources of nutrients in the basin that is mainly listed in the vulnerable areas identified under the Nitrates Directive 91/676/EEC, on the protection of waters against pollution caused by nitrates from agricultural sources. For the water resources management and environmental policy is crucial to recognize distribution of pollution sources throughout main categories. The thesis is concerned with the seasonal variability of the average mass concentrations along the river channel. Broadly used mathematical modelling software of water quality is discussed in the sense of reliability, availability and user interface. Last but not least is a suggestion of two improvements of the water quality based on the MIKE Basin modelling software. The main aim of these proposals is to be realistic in the economical and environmental sense. Proposals consider both in point and non-point sources.

Key words:

Mathematical modelling, MIKE Basin, Water Quality, Water Quality models, Hydrology, Olšava