

Determination of Atmospheric Pollution from Satellite Data

Abstract

The subject of this project is to determine air quality in Prague and the surrounding area based on satellite images and ground measurements data. The goal is to derive equations for calculating an amount of a specific pollutant over the entire area of the image. The first part of the thesis is devoted to the general theory and literature review related to this topic. The methodological part describes the steps of the procedure to handle the task, including e.g. converting satellite DN values to the radiometric values, atmospheric correction, regression analysis and mapping of the area of interest. Subsequently, the results are visualized, compared to the traditional interpolation methods and discussed. Finally, the contributions of this project and possible improvement of work on the topic are presented.

Key words: *Air pollution, Satellite images, Atmospheric correction, Regression analysis, Prague and surroundings*