

# Abstract

The thesis is divided into two parts: literature review and case study.

The aim of recherche part is an introduction to issue of urban heat islands and summarization of knowledge of relationship between urban heat islands and surrounding environment. It describes effect of urban heat islands in different biomes and with different land cover.

Second part solves detection of urban heat island in city of Prague in the Czech republic locality and its relationship to vegetation indices by using satellite data Landsat 8. The aim of case study is to find a relationship between land surface temperature and its impact on vegetation. The study proves linear correlation between Normalized Difference Water Index (NDWI) and measured land surface temperature in areas with Normalized Difference Vegetation Index (NDVI) above a threshold. It was found city area vegetation to be in worse condition as compared to rural area vegetation.

Key words: remote sensing, environmental research, urban heat islands, vegetation indices, Prague