Application of Machine Learning Techniques for Ecotope Classification Based on Hyperspectral Images

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PRESENTATION ABSTRACT

Flanders is a highly populated and industrialised area which exerts high pressure on remaining natural areas. The BWK (biological valuation map) is the only and main ecotope level data source for detailed mapping and monitoring of natural areas and areas with high ecological value. BWK is unique in its high level of standardization in implementation and detail classifications. The objective of ECOMALT is to investigate the use of hyperspectral data for ecotope classification with established machine learning algorithms which are fast and reasonably accurate. Our first investigation in BWK mapping using decision trees classifier, wrapper approach feature selection, and voting classifications show promising results which are superior to convention method SAM (Spectral Angular Mapper). This presentation will describe accuracy assessment of machine learning algorithm, a preliminary classification map at the study area of Dender, and potential use and requirements of hyperspectral data for updating BWK.