

Influence of tree species complexity on discrimination performance of vegetation indices

ABSTRACT

Performance of different vegetation indices (VIs) in combination with single- and multipleendmember (SEM and MEM) for discriminating Corsican and Scots pines with different ages and Broadleaves tree species is demonstrated by using an airborne hyperspectral data. The analysis is performed in three different complexity levels. The results show by increasing tree species complexity, overall accuracy significantly reduced. An overall accuracy up to 90% is obtained from the first category with the least complexity; however, it is reduced to 55% in the third category with the highest complexity. By employing MEM, performance of normalized difference vegetation index (NDVI) is increased by 10%.

Keyword: Airborne hyperspectral data; Different age covers; Multiple-endmember; Remote sensing; Tree species discrimination; Vegetation indices