

A review of hyperspectral remote sensing and its application in vegetation and water resource studies

M Govender^{1*}, K Chetty² and H Bulcock²

¹CSIR Natural Resources and the Environment, % School of Environmental Sciences, University of KwaZulu-Natal, Private Bag X01, Scottsville 3209, South Africa

²School of Bioresources Engineering and Environmental Hydrology, University of KwaZulu-Natal, Private Bag X01, Scottsville 3209, South Africa

Abstract

Multispectral imagery has been used as the data source for water and land observational remote sensing from airborne and satellite systems since the early 1960s. Over the past two decades, advances in sensor technology have made it possible for the collection of several hundred spectral bands. This is commonly referred to as hyperspectral imagery. This review details the differences between multispectral and hyperspectral data; spatial and spectral resolutions and focuses on the application of hyperspectral imagery in water resource studies and, in particular the classification and mapping of land uses and vegetation.

Keywords: hyperspectral, multispectral, spectral resolution, spatial resolution, vegetation classification, water resources