Abstract

Shadows appear in remote sensing images due to elevated objects. Shadows cause hindrance to correct feature extraction of image features like buildings, towers etc. in urban areas it may also cause false color tone and shape distortion of objects, which degrades the quality of images. Hence, it is important to segment shadow regions and restore their information for image interpretation. This paper presents an efficient and simple approach for shadow detection and removal based on HSV color model in complex urban color remote sensing images for solving problems caused by shadows. In the proposed method shadows are detected using normalized difference index and subsequent thresholding based on Otsu’s method. Once the shadows are detected they are classified and a non shadow area around each shadow termed as buffer area is estimated using morphological operators. The mean and variance of these buffer areas are used to compensate the shadow regions.

References

colour space. Information Technology, 26(12), pp. 7-9.


- Wang, Ning; Lang, Congyan; Xu, De, 2011, Image-Based Shadow Removal via Illumination Chromaticity Estimation in Multimedia Information Networking and Security (MINES), pp. 33-36


**Index Terms**

Computer Science  
Signal Processing

**Keywords**

Shadow Compensation  
Shadow Detection  
Thresholding