Abstract

Major technical constraints like minimum data storage at satellite platform in space, less bandwidth for communication with earth station, etc. limits the satellite sensors from capturing images with high spatial and high spectral resolutions simultaneously. To overcome this limitation, image fusion has proved to be a potential tool in remote sensing applications which integrates the information from combinations of panchromatic, multispectral or hyperspectral images; intended to result in a composite image having both higher spatial and higher spectral resolutions. The research in this area cites date back to last few decades, but the diverse approaches proposed so far by different researchers have been rarely discussed at one place. This paper is an honest attempt to collectively discuss all possible algorithms along with quality metrics following two assessment procedures i.e. at full and reduced scale resolutions to evaluate performance of these algorithms.

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**Index Terms**

Computer Science  
Image Processing

**Keywords**

Image fusion  
Relative spectral contribution methods  
Component substitution  
Multiresolution analysis

Quality metrics for performance evaluation.