

The Assessment of Atmospheric Correction in Landsat-TM Due to Topographic Effects

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SUMMARY

Java Island has only less than nine percent of its former natural forests. Most of these remnant forests exist in mountainous regions. Monitoring these areas with multi-spectral and multi-temporal remote sensing images raises some difficulties. The effects of topography, coupled with low and different sun angle creates significant shadowing effect in the data. Therefore, the process of topographic normalization may be critical as a preliminary step to multi-spectral and multi-temporal digital classification of vegetation type (McDonald et al. 2000, Riano et al. 2003). This method requires digital elevation model (DEM). Though it is available for most of the Java Island, not all of the stakeholders have the ability to acquire it. This research was aimed to overcome this problem by knowing when to carry out topographic normalization on remote sensing images. The objective of the research is to know on what combinations of elevation, slope and aspect of the terrain that produce a significantly different reflectance of pre- and post-corrected images. Landsat TM and Digital Elevation Model produced from vector topographic maps were used in this research and the analysis were done with GRASS GIS and GNU/R statistical software.

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