A Study on Winter-Covered Optical Satellite Imagery for Post-Fire Forest Monitoring

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Abstract

Damage to forest trees, caused by wildfire, changes their spectral reflectance signature. This factor led to the initiation of a research project at the Remote Sensing & GIS Laboratory, Kookmin University, to determine if multispectral data acquired by IKONOS could provide fire scar and burn severity mapping. This paper will present detail mapping of burned areas in the eastern coast of Korea with IKONOS imagery.

In addition, a single post-burn Landsat-7 ETM+ data was used to compare with IKONOS, the study area. Burn severity map based on IKONOS image was found to be affected by strong topographic illumination effects in the mountain forest.

But it has better the delineation of the burn-scarred area.

In this study the NDVI was analyzed for geometric illumination conditions influenced by topography(slop, aspect and elevation) and shadow(solar elevation and azimuth angle).