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# A Study to Improve the Segmentation Result for VHR Satellite Imagery Using PCA Technique

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**Abstract:** Recently, as the number of available satellite images has increased exponentially, various technologies using satellite images are being developed, and the satellite image utilization service market is also growing. The Korea Aerospace Research Institute produces and distributes mosaic images on the Korean Peninsula every year to improve the convenience of users using satellite images, and is also promoting the development of various technologies using mosaic images.

In this study, the PCA technique was applied to improve the segmentation result of mosaic images that must be performed prior to the object-based classification using mosaic images. As a result of the study, it was confirmed that the segmentation result was improved when the PCA analysis results were used together. In particular, when segment the image using mosaic images and PCA result together, it was confirmed that the tendency of forests and waters to be over-divided was alleviated. These findings are expected to help improve image segmentation and classification results by applying not only to mosaic images but also to images which have distorted spectral information or provide RGB images only in the future.

Keywords: KOMPSAT, segmentation, mosaic images, PCA