# Selection of Appropriate Classification Technique for Lithological Mapping of Gali Jagir Area, Pakistan

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**Abstract :** Satellite images interpretation and analysis assist geologists by providing valuable information about geology and minerals of an area to be surveyed. A test site in Fatejang of district Attock has been studied using Landsat ETM+ and ASTER satellite images for lithological mapping. Five different supervised image classification techniques namely maximum likelihood, parallelepiped, minimum distance to mean, mahalanobis distance and spectral angle mapper have been performed on both satellite data images to find out the suitable classification technique for lithological mapping in the study area. Results of these five image classification techniques were compared with the geological map produced by Geological Survey of Pakistan. The result of maximum likelihood classification technique applied on ASTER satellite image has the highest correlation of 0.66 with the geological map. Field observations and XRD spectra of field samples also verified the results. A lithological map was then prepared based on the maximum likelihood classification of ASTER satellite image.

**Keywords :** ASTER, Landsat-ETM+, satellite, image classification

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