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## Spectral Analysis of Hyperion Data for Mapping the Spatial Variation of in a Part of Latehar & Gumla District, Jharkhand

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### ABSTRACT

Reflectance and emittance spectroscopy in the near-infra red and short-wave infra red offers a rapid, Inexpensive, non-destructive tool for determining the mineralogy of rock and soil samples. Hyperspectral remote sensing has the potential to provide the detailed physico-chemistry (mineralogy, chemistry, morphology) of the earth' s surface. This information is useful for mapping potential host rocks, alteration assemblages and mineral characteristics, in contrast to the older generation of low spectral resolution systems. In the present study EO-1, hyperion data has been used for the delineation of AL+OH minerals. The requirements for extracting bauxites from Hyperion images is to first compensate for atmospheric effects using cross track illumination correction & the log residual calibration model. MNF transformation was applied to reduce the data noise and for extracting the extreme pixels. Some pure pixel end member for the target mineral and the backgrounds were used in this study to account for the spectral angle mapping & matched filtering and the results were validated with the respect of field study.

### KEYWORDS

Hyperspectral Analysis, Bauxite, Spectral Angle Mapping, Matched Filtering

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