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Lithological mapping using ASTER data in the Moroccan Anti Atlas belt

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Remote sensing data reveals a great importance for lithological mapping due to their spatial, spectral and radiometric characteristics. The Terra ASTER Data were processed in this work for mapping different lithological facies of Kerdous inlier in the Moroccan Anti Atlas Belt. This study area is characterized by its mineral potential and lithological diversity. Bands ratios, Optimum Index Factor (OIF) method and supervised classification by Maximum Likelihood (ML) and Support Vector Machine (SVM) were used for mapping lithological units. The RGB color composites (4/9, 3/7, 4/1) and (931) allow discrimination of facies without prior knowledge of the study site. The ML and SVM classification methods allow better discrimination of lithological units but require a good selection of regions of interest. Compared to the ground reality and the existing map data, the ML and SVM methods allow mapping of facies with respective accuracies of 72% and 70%.