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Vegetation cover classification using Sentinel-2 time-series images and K-Means clustering

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Abstract



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Abstract:

The vegetation cover is a significant variable in the analysis of drought disasters. It is based on the availability of rainfall and surface water in the region. In the present study, the Sentinel-2 satellite imagery is used to analyze the vegetation cover of the region. The Normalized Difference Vegetation Index (NDVI) was computed to analyze the seasonal dynamics of the Kharif and Rabi seasons of the year 2017-2018. Furthermore, the vegetation cover classification was carried out by using an unsupervised K-Means clustering algorithm. The classifier categorized clusters into five classes: water, settlement, non-vegetation, sparse vegetation, and healthy or dense vegetation cover. Among that, the sparse vegetation cover has increased, and dense vegetation had significantly decreased in 2018.

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