Abstract

In country like India, where agricultural economy plays major role, understanding and tracking the soil nutrients are essential. However, the chemical analysis, which determines the nutrient contents of soil, is expensive and time consuming. Hence, we attempt to exploit remote sensing imagery for estimating them. This paper analyzes the correlation between the level of soil nutrients and wavelet decompositions of remote sensing imagery of a particular region. Four renowned wavelet transformations such as Daubechies, Symlet, Biorthogonal and Coiflet are used to represent the image in wavelet domain. Subsequently, here exploit a neural network model to predict the soil nutrient content using the principle wavelet components. Experimental analysis on the prediction accuracy and the correlation measure reveals the suitability of each wavelet transformation of remote sensing imagery in predicting the soil nutrients.

References

1. Xuelei Wang., C.M. Mannaerts., Shengtian Yang., Yunfei Gao and Donghai Zheng.,


23. V.A.Gulhane and S.V.Rode, “Correlation Analysis on Soil Nutrients and Wavelet Decompositions of Satellite Imagery”, Accepted to publish in proceedings of International Conference on Industrial Instrumentation and Control (ICIC 2015), Pune, India

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