

Chaos modeling applied to crops classification (Berambadi basin, South of India)

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To understand the time evolution of ground water, it is important to be able to distinguish crops for which water demand is high. Numerous methods based on optical remote sensing dedicated to crop identification have been developed. However, their application remains difficult where plots do not exceed a few hectares, with a high heterogeneity in their distribution in time and space. This difficulty is emphasized in South India where the cloudy conditions during the monsoon season can disturb the detection of crops during plants growth.

A novel classification approach based on nonlinear dynamical systems is introduced here, with the aim to take advantage of such scarce signal. Ten different crops are considered in a catchment located in the Berambadi basin (South India). A bank of model is established using the global modeling technique [1,2] which is well adapted for modeling crops cycles [3]. These models are then used to identify the crops in time and space.

Références

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