

Characterization of the deforestation process in the Congo rainforest with optical and micro-wave data

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Abstract

In South Cameroon, the deforestation is mainly caused by slash-and-burn agriculture. This practice is conducted on small plots within the forest, leading to a diffuse pattern of deforested areas. In such a complex farming system, with cocoa plantations under tree cover and intercropping, the significance of high resolution satellite data can only be evaluated in terms of discrimination of the main land covers : savannas, degraded forest and dense forest. This has been done on SPOT, ERS (received at the German transportable station in Libreville) and JERS SAR images. The algorithm used to classify the SAR images is based on the statistical properties of the land covers (PAPRI algorithm). The results are presented, compared to SPOT "ground-truth", and the synergy between the different sensors is discussed.

In order to enlarge the field of the investigation, the study area has been extended southern to an area with large industrial plantations. The discrimination of oil palm, hevea, and sugar-cane plots has been studied on SAR images, and classified images are presented and discussed.