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TROPISCO: REAL-TIME DETECTION OF TROPICAL FOREST LOSS USING SENTINEL-1 DATA

Abstract

The objective of the TropiSCO project, awarded by the Space for Climate Observatory, is to improve the monitoring of forest loss in tropical forests through the development of an early warning system.

Tropical forests provide humanity with many ecosystem services. Forests contribute to climate change mitigation by storing large amounts of carbon. Although they make up only 6

Remote sensing is an essential technology for monitoring large-scale forest loss. However, most of the existing systems are based on optical satellite data, which are very disturbed by the high cloud cover, resulting in long detection times, generally several months in the tropics.

However, an alternative method based on the use of satellite radar imagery has been developed at the Centre Nationale d'Etudes Spatiales (CNES) and CESBIO. This method has the advantage of working regardless of weather conditions and allows a much faster detection of lost forests areas, with a systematic weekly update. It has already proven itself in several countries, such as Guyana, Suriname, Guyana, Gabon, Vietnam, Laos and Cambodia (Mermoz et al., 2021).

The TropiSCO project has developed an operational system to provide forest loss maps produced weekly, with a minimum mapping unit of 0.1 hectare. On the project's web platform, users have access to the visualization and analysis of these data, in a free and accessible manner. The platform also allows to analyze the evolution of forest loss over time.

These data are potentially used by many users, including governments, NGOs, universities, the general public, but also companies wishing to reduce the risk of forest loss in their supply chains or actors of fire monitoring.