Geophysical Research Abstracts
Vol. 13, EGU2011-12858, 2011
EGU General Assembly 2011


# Preliminary development of a drone for the qualitative evaluation of the grass cover and gullies in agricultural lands

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Changes at the grass cover and at the rills and gullies occur in magnitudes of several centimeters which are difficult to map and to evaluate under large spatial scales. Therefore, survey methods need to be developed enabling the detection and documentation of the temporal and spatial changes in agricultural lands. The aim of this work is to present a remote sensing method using a controlled drone as a platfrom for photographic/video cameras which was designed to meet the needs of spatial and temporal resolution for process monitoring.

The device designed is a multicopter which uses four brushless motors controlled by a flight signal of 2.4 GHz. The flight characteristics (route, height, camera parameters, etc.) can be configured from a PC interface. The equipment is vey light since it works with Lipo batteries whose duration is about 15 minutes. Currently, a first protype has been developed and a series of improvement have been planned such as a system to know the charge level of the batteries of the drone for the flight, the real time control of the focused picture through the control interface and a time programme for taking pictures/videos on singular points.