Progress on Platforms, Sensors and Applications with Unmanned Aerial Vehicles in soil science and geomorphology

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The recent increase of performance and endurance of electronically controlled flying platforms, such as multi-copters and fixed-wing airplanes, and decreasing size and weight of different sensors and batteries leads to increasing popularity of Unmanned Aerial Systems (UAS) for scientific purposes. Modern workflows that implement UAS include guided flight plan generation, 3D GPS navigation for fully automated piloting, and automated processing with new techniques such as "Structure from Motion" photogrammetry. UAS are often equipped with normal RGB cameras, multi- and hyperspectral sensors, radar, or other sensors, and provide a cheap and flexible solution for creating multi-temporal data sets. UAS revolutionized multi-temporal research allowing new applications related to change analysis and process monitoring.

The EGU General Assembly 2014 is hosting a session on platforms, sensors and applications with UAS in soil science and geomorphology. This presentation briefly summarizes the outcome of this session, addressing the current state and future challenges of small-platform data acquisition in soil science and geomorphology.