

SPECTRAL EVOLUTION

PSR+ and UAV Airborne Spectrum Measurement Application

A SPECTRAL EVOLUTION distributor in China, Azup International Group, Ltd., worked with Beijing Anzhou Technology Co. Ltd on attaching a PSR+ field spectroradiometer to an eight rotor UAV for measuring ground cover across three fields as a test of measurement and stability.

The system included:

- An eight rotor UAV
- Integrated gimbal PTZ camera for stable imagery acquisition
- Full automatic aerial survey
- Flight control triggering of data acquisition
- GPS coordinates simultaneously obtained
- Object image synchronization storage
- A variety of modes for route designation
- High resolution/low noise spectra
- Pre-lens can be reduced to field of view

Test One

Field route coverage of about 800 meters by 200 meters. Weather was sunny. Flight parameters included 30 meter altitude with a field of view angle of 25 degrees, flight interval of 50 meters with an equidistant triggering distance of 50 meters. Scans triggered by flight control system for measurement—isometric trigger set to 50 meters.

Test Two

Lashi Hainan region with thin cloud coverage for weather. Flight parameters included altitude of 20 meters, field of view angle of 25 degrees, flight interval 20 meters, equidistant triggering distance of 30 meters. Scans triggered by flight control system, set with a 30 meter equidistant trigger.

Test Three

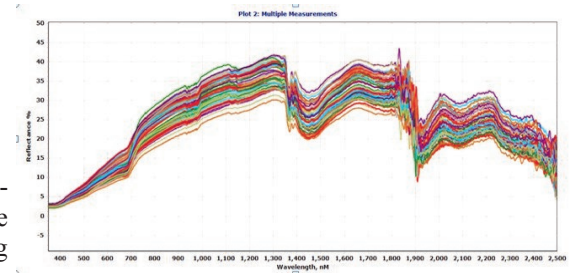
Tai'an potato base—bare field. Stable light with a cloud around the sun. Flight parameters included altitude of 30 meters, field of view angle of 25 degrees, flight interval of 20 meters, equidistant triggering of 30 meters. Scans triggered by flight control system, set with a 30 meter equidistant trigger.

Conclusions

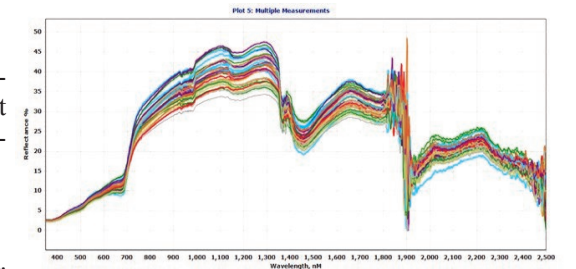
The UAV and PSR+ system was stable and captured reliable data. Airborne measurement was efficient with no damage to the sites. Measurements taken with a system like this can save labor and improve efficiency.



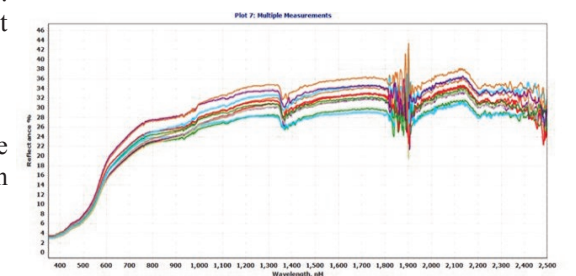
SPECTRAL EVOLUTION PSR+ mounted to an eight rotor UAV.



Spectra of scans taken from Test One.



Spectra of scans taken from Test Two.



Spectra of scans taken from Test Three.

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