Internship: Applying the Surface Energy Balance model to UAV imagery

Company description

eLEAF is a Wageningen based remote sensing company that supplies near real-time data to the agriculture and water sector on crop evaporation and biomass production. Our aim is to support sustainable water use, increase food security, and protect environmental systems by delivering accurate and reliable data on crop and water conditions. We are active worldwide, having completed projects in over 30 countries, and work closely with partners that are at the forefront of new developments in agronomics and remote sensing.

At the heart of the company is eLEAF's PiMapping® technology. This technology is a set of algorithms used to enrich raw satellite imagery. Through energy balance modelling land surface atmosphere interactions are described, resulting in pixel specific information on a wide variety of parameters, including biomass production, crop water use, water shortage and weather conditions. These parameters form the basis of our operational applications. With this technology eLEAF has been awarded "Geospatial Solutions Company of the Year 2013".

Job description

The surface energy balance algorithms (SEBAL, ETLook) have been used around the world. They have been validated in the field and on many occasions rate as most accurate currently commercially available. Our algorithms perform well on low (1000m) to high resolutions (10m) satellite imagery. It has not been tested on very high resolution imagery (<1m) that can be acquired by UAV's. The aim of this study is to test the surface energy balance algorithms on existing UAV imagery. The study comprise of three main activities:

- Processing the UAV images and applying the surface energy balance algorithm.
- Comparing UAV output with satellite based results and field measurements.
- Assessing results and recommending improvements to the surface energy balance algorithm in relation to UAV imagery.

The final content and timelines will be agreed upon by the candidate, university and eLEAF before the internship starts.

What we ask
- Background in the application of remote sensing for agriculture
- Acquainted with surface energy balance algorithms and micro-meteorology
- Strong analytic skills
- Independent worker

What we offer
- Working with state of the art technology in remote sensing
- Introduction to the growing industry of remote sensing and precision farming
- Internship position in a dynamic internationally oriented company
- Workplace in Wageningen
- Internship compensation

Application
You can find more information about eLEAF at www.eleaf.com or by contacting Steven Wonink (steven.wonink@eleaf.com).