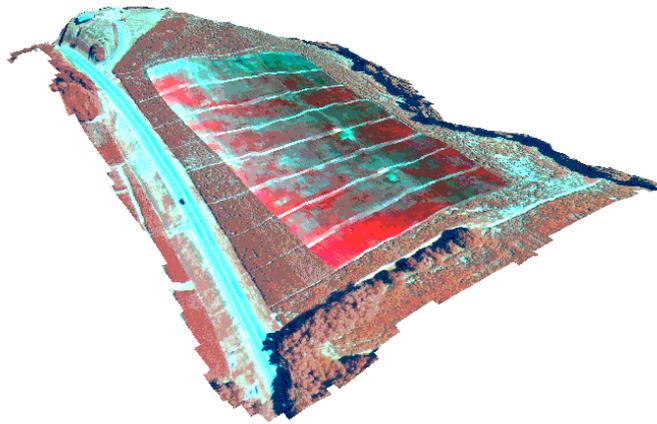


Remote Sensing Science for Agriculture

The effective use of remote sensing for agriculture requires an understanding of the causes of image tones. Basic remote sensing research, or *remote sensing science*, seeks to advance our knowledge of the physiological and physical factors leading to soil, plant, and atmosphere remote sensing signals. New instrumentation, calibration procedures, plant canopy reflectance models, and new analysis procedures for retrieving information from remotely sensed imagery result from this research.



The photo on the left shows an OPE3 scientist with a commercial airborne data provider adjusting an airborne hyperspectral scanner system developed with the help of an SBIR. The illustration on the right shows a 3-D view of a calibrated image taken with the scanner system overlaid on a color infrared photo that is draped over a digital elevation model of the OPE3 South Field. Detailed analysis of the spectral characteristics of the crop, and a recognition of the need for high quality imaging system calibration directly influenced the scanner system design.

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