

## **Great Lakes Hyperspectral Water Quality Instrument Suite for Airborne Monitoring of Algal Blooms**

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NASA Glenn Research Center and NOAA Great Lakes Environmental Research Lab are collaborating to utilize an airborne hyperspectral imaging sensor suite to monitor Harmful Algal Blooms (HABs) in the western basin of Lake Erie. The HABs are very dynamic events as they form, spread and then disappear within a 4 to 8 week time period in late summer. They are a concern for human health, fish and wildlife because they can contain blue green toxic algae. Because of this toxicity there is a need for the blooms to be continually monitored. This situation is well suited for aircraft based monitoring because the blooms are a very dynamic event and they can spread over a large area. High resolution satellite data is not suitable by itself because it will not give the temporal resolution due to the infrequent overpasses of the quickly changing blooms. A custom designed hyperspectral imager and a point spectrometer mounted on a T 34 aircraft have been used to obtain data on an algal bloom that formed in the western basin of Lake Erie during September 2006. The sensor suite and operations will be described and preliminary hyperspectral data of this event will be presented.

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