The Coastal Ocean Color Imager Payload Concept

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ABSTRACT

The Coastal Ocean Color Imager (COCI) is a moderate resolution UV-Visible Near-infrared (UVN) sensor capable of providing hyperspectral image data for proto-operational and science applications in coastal oceans, estuaries and inland water bodies. A concept study funded by the Canadian Space Agency is currently on-going in collaboration with NASA and NRL to explore the suitability and benefit of COCI as a complementary secondary payload on NASA’s Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission.

The COCI payload includes a wide swath spectral UVN imager and a multi-spectral short-wave infrared (SWIR) imager. For routine operation, the UVN imager provides 110 spectral bands from 360 nm to 910 nm at a nominal nadir ground sampling distance of 100 m and a nominal spectral sampling interval of 5 nm. In special modes, the instrument can provide a finer spectral sampling. The SWIR imager provides three spectral bands at nadir ground sampling distance of 235 m. Both instruments are co-aligned so that their respective field of view are overlapping.

The optical instruments are mounted on a rotating platform that is used to vary the view angle to avoid sun glint and to provide sufficient pointing agility to image Canada on a weekly basis and flexibility to capture short term events such as harmful algal blooms or contamination from flooding, effluents or from spills, etc.

The presentation will cover the main results of the feasibility study associated with the instrument, such as the instrument concept and its expected performance.