IAF EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

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NASA'S AEROSOL, CLOUD, CONVECTION AND PRECIPITATION (ACCP) OBSERVING SYSTEM PROGRESS IN THE PRE-FORMULATION STUDY

Abstract

In response to the 2017 earth science Decadal Survey, a set of community generated recommendations for earth observations over the next 10 years, NASA convened four preformulation studies. One study combined objectives in the areas of "Aerosol" and "Cloud, Convection and Precipitation" (ACCP). NASA Headquarters assigned NASA Goddard Space Flight Center, as the study lead Center, to propose a preformulation study plan preferably including representation from NASA Centers, universities, international partners, and industry.

The ACCP study leadership and Headquarters has developed the ACCP-study plan and established the Science and Applications Traceability Matrix (SATM), which lists the scientific goals/objectives and connects them to specific geophysical measurements. The SATM has identify five overarching ACCP goals and eight scientific objectives to meet the Decadal Survey recommendations.

The ACCP study team is the process of examining a series of observing system architectures where measurement capabilities and estimated cost of large satellites, constellations of small-Sats, and hybrid designs are being evaluated against the SATM in a quasi-quantitative manner. Additionally, the ACCP study team is hosting two suborbital observation workshops where air-borne and surfaced based measurements will be evaluated for their ability to provide measurements for scientific analysis, enhancing satellite retrieval algorithms, as well as retrieval calibration and validation. The team has explored 41 different observing system architectures. Currently, the team is closely evaluating more detailed designs of 6 of these architectures. The goal of this three-year study is to provide three to five different, cost constrained observing system de-signs addressing the scientific objectives enumerated in the Decadal Survey.