

EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Data Management Systems (4)

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WELL CALIBRATED EARTH OBSERVATIONS FROM SPACE– A GENUINE NATIONAL
RESOURCE**Abstract**

As the skies fill with the latest in miniaturized Earth observing system technology, the value of high quality calibration sources in space is readily apparent. The ability to perform robust geometric and radiometric calibration is foundational to a plethora of science applications, from multi-sensor data harmonization, and change analysis over time. The most rigorous, or “gold standard” calibration strategies are generally only possible via the “large” class of space systems. The Landsat series has been long recognized as a gold standard of calibration, which is relied upon by many other collection systems operating today. Key components of the Landsat calibration strategy include use of– a detailed pre-launch characterization; on-board calibration reference lamps and solar diffusers; an operational image assessment and calibration process; an on-going vicarious calibration; collection and evaluation of pseudo invariant test sites on a regular basis to monitor long term stability (key to recalibration of the Landsat 1-5 archive); inter-calibration with other systems. Furthermore, users are provided with access to metadata and ancillary information for on-going calibration updates. In this talk, the utility of Landsat calibration standards is demonstrated for applications such as analysis ready time-series data for change analysis in climate studies, cross-platform data harmonization, and small sat calibration needs. With such a diversity of usefulness, Landsat calibration standards represent a true national resource for global Earth observing needs.