

Challenges and Successes in Creating Multi-Instrument/Multi-Platform Space-Based Earth System Data Records

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The creation of Earth System Data Records (ESDRs) from Earth-observing satellites is an important research activity if scientists are to be able to document Earth system evolution over multiple-decades and be able to demonstrate unambiguously that long-term changes seen are those of the Earth system and not the observing system. The in-space degradation of instruments along with the need for significant calibration and validation make the assembly of multi-instrument/multi-platform data records a challenging yet critical component of studies of the Earth's climate. In this talk, examples of how ESDRs have been created, emphasizing (but not focusing exclusively on) data from NASA's research satellites, but also making use of relevant data from operational satellites and those of NASA's international partners, will be presented. Some general principles and "lessons learned" from these examples will also be presented.

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