

Title: Global surface albedo based on geostationary data

Investigator(s): Jessica Matthews, CICS-NC
Bill Hankins, STG
Anand Inamdar, CICS-NC
Ken Knapp, NOAA/NCDC
Alessio Lattanzio, EUMETSAT

Institution: CICS-NC

Background:

Surface albedo is the fraction of incoming solar radiation reflected by the land surface, and therefore is a sensitive indicator of environmental changes. To this end, surface albedo is identified as an Essential Climate Variable (ECV) by the Global Climate Observing System (GCOS). In support of the Sustained, Coordinated Processing of Environmental Satellite Data for Climate Monitoring (SCOPE-CM), NCDC is implementing the Geostationary Surface Albedo (GSA) algorithm for GOES data to contribute to an international effort in collaboration with EUMETSAT and JMA. Currently, the GSA algorithm generates products operationally at EUMETSAT using geostationary data from satellites at 0° and 63°E and at JMA using 140°E geostationary data. To create the stitched global product, NCDC is tasked with implementing the algorithm for GOES-E (75°W) and GOES-W (135°W).

Previously the GSA algorithm was applied to GOES data only for viability studies with 10 days of data. To effectively and efficiently generate products with this algorithm over large time periods, much effort must be extended to understand the application to GOES data specifically. Initially the SCOPE-CM period of interest (2000-2003) will be processed, and following validation and verification of these products the GSA algorithm will be used to process the entire GOES period of record (1978-present).