Community Review of Southern Ocean Satellite Data Needs

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Appendix 1: Southern Ocean Satellite Data Requirements Survey

What are your requirements for Southern Ocean satellite data? Are your data needs being met? Take this quick online survey NOW!

This joint initiative of Southern Ocean Observing System (SOOS), Climate and the Cryosphere (CliC), and World Meteorological Organization Polar Space Task Group (WMO PSTG) aims to identify the satellite data requirements for the Southern Ocean (across all temporal/spatial scales) and to compile this information into a community report of Southern Ocean satellite data requirements.

This is a great opportunity to voice your needs, and feed information directly into the strategic planning for future missions. Provide feedback on current data streams, issues with data access, validation issues, gaps in data products, spatial and temporal coverage etc. This survey is open to all Southern Ocean data users, across all data types (air-sea flux, sea-ice, biological, physical, etc.)

If you have any questions please contact Louise Newman (newman@soos.aq) or Jenny Baeseman (jenny.baeseman@npolar.no)

Background Information
This section provides us with some basic information on the expertise and location of people undertaking the survey.

1) Expertise*
Please provide some keywords that explain your expertise (e.g., Remote Sensing Sea Ice)

2) Country*

A) Key Data Requirements
This section of the survey invites information on your satellite product requirements for the Southern Ocean, unrestricted by a specific satellite or technology.

1) Product Description
e.g., Altimetry for sea-level variability

2) Required frequency
e.g., daily

3) Seasonality of required observation
e.g., seasonally continuous (radar), or seasonally restricted (optical)

4) Required Resolution
   Low
   High (~10m, non-commercial optical satellite)
   Very high (m scale, requires commercial satellite and associated costs for data)

5) Is this data already being collected for the Southern Ocean?
   Yes
   No
   I do not know

5a) If Yes, are there any issues associated with the existing data product(s)?

6) Is there other data that should be collected at the same time to compliment this Satellite data?
   e.g., in situ for validation, or other data, include description of space/time requirements for collocated measurements

7) Other Comments on this Data Product?

B) Focussed Satellite Data products for a Specific Geographic Region of high Scientific Interest
This section of the survey invites suggestions of priority regions of the Southern Ocean that could be targeted for a focussed, integrated, multi-product project, beyond the scope of existing satellite products and planning.

1) Region
   *include coordinates where possible*

2) What combination of complementary and overlapping (spatially/temporally) measurements are required?
   *List Product, Frequency, Resolution, Seasonality and any comments for each item*

3) What is the maximum separation in time between observations?

4) Ancillary data requirements
   *e.g., concurrent/complementary in situ data*

5) General Comments / thoughts

**General Comments**
*Please provide any comments/thoughts or additional information you would like to provide.*

Do you want to be kept informed on the outcomes of this survey? If yes, provide your name below and email.
Appendix 2: Acronyms

ACRE: Atmospheric Circulation Reconstructions over the Earth Initiative
AIRS: Atmospheric Infrared Sounder
AMI: Advanced Microwave Instrument
AMSR: Advanced Microwave Scanning Radiometer
AMSR-2: Advanced Microwave Scanning Radiometer 2
AMSR-E: Advanced Microwave Scanning Radiometer – Earth Observing System
AMSU: Advanced Microwave Sounding Unit
AMV: Atmospheric Motion Vector
ARTEMIS: Advanced Data Relay and Technology Mission
ASCAT: Advanced Scatterometer
ASPECT: Antarctic Sea Ice Processes and Climate
ATMS: Advanced Technology Microwave Sounder
AUV: Autonomous Underwater Vehicle
AVHRR: Advanced Very High Resolution Radiometer
AVISO: Archiving, Validation and Interpretation of Satellite Oceanographic data
BYU: Brigham Young University
CALIPSO: Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations
CATDS: Centre Aval de Traitement des Données SMOS / SMOS Endorsed Data Processing Center
CCAMLR: Commission for the Conservation of Antarctic Marine Living Resources
CCI: Climate Change Initiative
CEDA: Centre for Environmental Data Analysis
CERES: Clouds and Earth’s Radiant Energy System
CFSR: Climate Forecast System Reanalysis
CliC: Climate and the Cryosphere Project
CONAE: Comisión Nacional de Actividades Espaciales
CZCS: Coastal Zone Color Scanner
DAAC: Distributed Active Archive Center
DCM: Deep Chlorophyll Maximum
DLR: Deutsches Zentrum für Luft- und Raumfahrt / German Aerospace Center
DMSP: Defense Meteorological Satellite Program
ECMWF: European Centre for Medium-Range Weather Forecasting
ECV: Essential Climate Variable
EOV: Essential Ocean Variable
EM: Electromagnetic
ERA-40: ECMWF reanalysis for the period September 1957 through August 2002
ERA-Interim: ECMWF reanalysis global atmospheric reanalysis from 1979, continuously updated in real time
ERS-1/2: European Remote Sensing Satellite 1/2
ESA: European Space Agency
ESRL: Earth Systems Research Laboratory
EU: European Union
EUMETSAT: European Organisation for the Exploitation of Meteorological Satellites
GCOM: Global Change Observation Mission
GCOM-W1: Global Change Observation Mission Water 1, “Shizuku”
GCOM-W2: Global Change Observation Mission Water 2
GCOS: Global Climate Observing System
GES DISC: Goddard Earth Sciences Data and Information Services Center
GHRSST: Group for High Resolution Sea Surface Temperature
GLIMS: Global Land Ice Measurements from Space
GMI: GPM Microwave Imager
GPM: Global Precipitation Measurement
HICO: Hyperspectral Imager for the Coastal Ocean
HOAPS: Hamburg Ocean Atmosphere Parameters and Fluxes from Satellite Data
IAATO: International Association of Antarctica Tour Operators
ICEMAR: Sea Ice Service for Maritime Operations
ICESat: Ice, Cloud, and land Elevation Satellite
ICESat/GLAS: Ice, Cloud, and land Elevation Satellite / Geoscience Laser Altimeter System
IICWG: International Ice Chart Working Group
IMOS: Integrated Marine Observing Systems
INPE: Brazilian National Institute of Space Research
IOCCG: International Ocean Colour Coordinating Group
ISRO: Indian Space Research Organisation
JAXA: Japanese Aerospace Exploration Agency
JPL: Jet Propulsion Laboratory
JRA: Japanese Reanalysis
KNMI: Koninklijk Nederlands Meteorologisch Instituut / Royal Netherlands Meteorological Institute
LiDAR: Light Data And Ranging
LIMA: Landsat Image Mosaic of Antarctica
MERIS: Medium Resolution Imaging Spectrometer
MERRA: Modern-Era Retrospective Analysis for Research and Application
MIZ: Marginal Ice Zone
MLD: Mixed Layer Depth
MODIS: Moderate Resolution Imaging Spectroradiometer
NASA: National Aeronautics and Space Administration
NCEP: National Centers for Environmental Prediction
NCAR: National Center for Atmospheric Research
NERC: Natural Environment Research Council
NIC: National Ice Center
NIS: National Ice Service
NISAR: NASA-ISRO SAR Mission
NOAA: National Oceanic and Atmospheric Administration
NSCAT: NASA Scatterometer
NSF: National Science Foundation
NSIDC: National Snow and Ice Data Center
NWP: Numerical Weather Prediction
OBPG: Ocean Biology Processing Group
OCI: Ocean Color Imager
OCM-3: Ocean Color Monitor 3
OCO-2: Orbiting Carbon Observatory 2
OCTS: Ocean Color and Temperature Scanner
OLCI: Ocean and Land Colour Instrument
OOPC: Ocean Observations Panel for Climate Change
OSCAT: OceanSat Scatterometer
OSI-SAF: Oceans & Sea Ice Satellite Application Facility
PGC: Polar Geospatial Center
POC: Particulate Organic Carbon
PODAAC: Physical Oceanography Distributed Active Archive Center
QA4EO: Quality Assurance Framework for Earth Observation
QuikSCAT: Quick Scatterometer
RADAR: Radio Distance and Ranging
READER: REference Antarctic Data for Environmental Research
REMSS: Remote Sensing Systems
SAOCOM: SAtélite Argentino de Observación COnto Microondas
SAR: Synthetic Aperture Radar
SASS: Seasat-A Scatterometer System
SCAR: Scientific Committee on Antarctic Research
SCOR: Scientific Committee on Ocean Research
SeaBASS: SeaWiFS Bio-optical Archive and Storage System
SeaWiFS: Sea-Viewing Wide Field-of-View Sensor
SGLI: Second-Generation Global Imager
SIR: Scatterometer Image Reconstruction
SIRF: Scatterometer Image Reconstruction Filter
SIRAL: Synthetic Aperture Interferometric Radar Altimeter
SMAP: Soil Moisture Active Passive (Mission)
SMOS: Soil Moisture and Ocean Salinity
SOCCOM: Southern Ocean Carbon and Climate Observations and Modeling project
SMMR: Scanning Multichannel Microwave Radiometer
SOCRATES: Southern Ocean Clouds, Radiation, Aerosol Transport Experimental Study
SOOS: Southern Ocean Observing System
SSH: Sea Surface Height
SSM/I: Special Sensor Microwave Imager
SSMIS: Special Sensor Microwave Imager Sounder
SSS: Sea Surface Salinity
SST: Sea Surface Temperature
SWOT: Surface Water Ocean Topography
TRMM: Tropical Rainfall Measuring Mission
UAS: Unmanned Aircraft System
ULS: Upward Looking Sonar
USGS: United States Geological Survey
VGPM: Vertically Generalized Primary Production Model
VIIRS: Visible Infrared Imaging Radiometer Suite
VSWIR: Visible/Short Wave Infrared
WCRP: World Climate Research Programme
WMO: World Meteorological Organization