ESA Climate Change Initiative

Paolo Cipollini
ESA Climate Office

ci.esa.int | @esaclimate

ESA UNCLASSIFIED - For Official Use
Home of the ESA Climate Office – ESA’s hub for climate research
ESA Climate Office

central point for coordinating all Earth Observation work conducted by ESA relating to climate and climate change
Plus two budget closure projects, climate modelling user group, open data portal, toolbox for data analysis and outreach activities.
ESA Climate Change Initiative

Essential Climate Variables

Aerosol
GHG
Ozone

Water vapour
Cloud

Soil moisture
Land surface temperature

HR Land cover
Biomass
Land cover
Fire

Glaciers
Snow
Permafrost

Sea ice
Ice sheets

Sea level
Sea state

Ocean colour
Salinity
Sea surface temperature

Lakes

Essential Climate Variables

European Space Agency
CCI data products: time coverage

http://cci.esa.int/data

data for 9 more ECVs coming soon
CCI ECV data specifications and information

- Gridded (at a usable resolution e.g. ¼ degree)
- Global coverage (where applicable)
- Long time series (20-30 years)
- Useful temporal resolution (daily, monthly...)
- Validated (by *in situ* observations) and tested by users
- Bias corrected (e.g. between different satellites)
- Uncertainty characterisation (per pixel, correlated...)
- Consistency between CCI_ECV datasets (e.g. SST and Sea Ice)
- Fully documented (CCI documentation) and version controlled
- Peer reviewed publications
- Available on CCI Data Portal, and Copernicus Services
- Can be sourced back to algorithm choice
- Level 1, 2 or 3
- Supporting information, e.g. cloud masks
- Data produced for specific audiences (e.g. Randolph Glacier Index)
- Data on Obs4MIPS

http://cci.esa.int/data

https://climatetoolbox.io
CCI toolbox - climatetoolbox.io

Data sources

Workspace

Operations

Variables
CCI achievements to date

178 Institutions
134 terabytes
Open data
13 ECVs transferred to Copernicus

21 ECVs
150+ datasets

610 Peer-reviewed articles
15 Papers, cited 60 times

450 European scientists
4.2 million files

IPCC AR5
28 Contributing authors
climate change initiative

→ CLIMATE MODELLING USER GROUP
Climate Modelling User Group (CMUG)

• The Climate Modelling User Group and provides places a climate system perspective at the centre of the CCI programme, a forum through which the Earth Observation Data Community and Climate Modelling and Reanalysis Community can work closely together.

• CMUG conducts modelling and reanalysis experiments on CCI datasets to understand their usability in a research context.

• CMUG results are fed back to the CCI_ECV teams in the way of Quality Assessment Reports, giving the teams insight in to how the data may be improved for users.

• CMUG is using CCI data with community assessment tools in climate research. This is mostly with developing ESMValTool components to use CCI data as provided through Obs4MIPs.
CCI Colocation Meetings – every year in March
Thank you

cci.esa.int | climate.office@esa.int | @esaclimate