GHRSST SCIENCE TEAM NEEDS FOR HIGH RESOLUTION SEA SURFACE TEMPERATURE MISSIONS

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The Danish Meteorological Institute

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Group for High Resolution Sea Surface Temperature (GHRSST)

The Group for High Resolution Sea Surface Temperature grew out of a GODAE Pilot Project, 1997-2008

- GHRSST is an **open international science group**
- **Coordinates** research and operational developments in satellite-derived sea surface temperature (SST)
- promotes the application of satellites for monitoring SST by enabling SST data producers, users and scientists to collaborate within an agreed framework of best practices.

What GHRSST does

GHRSST provides:

- A framework for sea surface temperature knowledge and data sharing.
- Best practices for data processing and assessing uncertainties in the satellite SSTs.
- A forum for scientific dialogue including how to provide SSTs for operational weather and ocean forecasting, climate studies and bringing SST to the operational users and scientific researchers.

Patrons and Sponsors

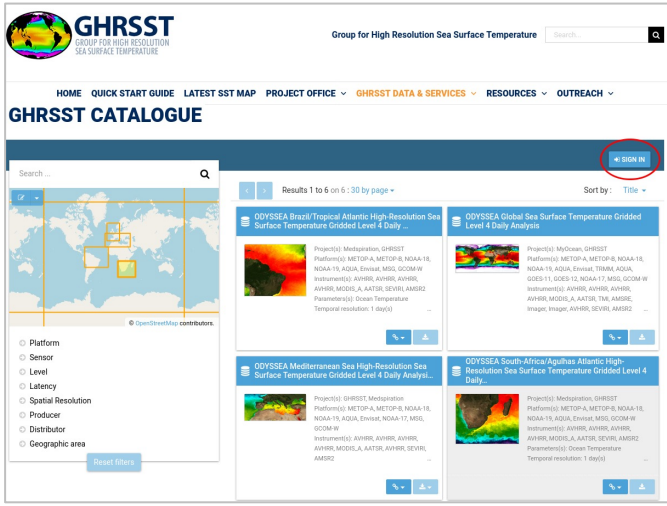
GHRSST products

One common data format for all SST products

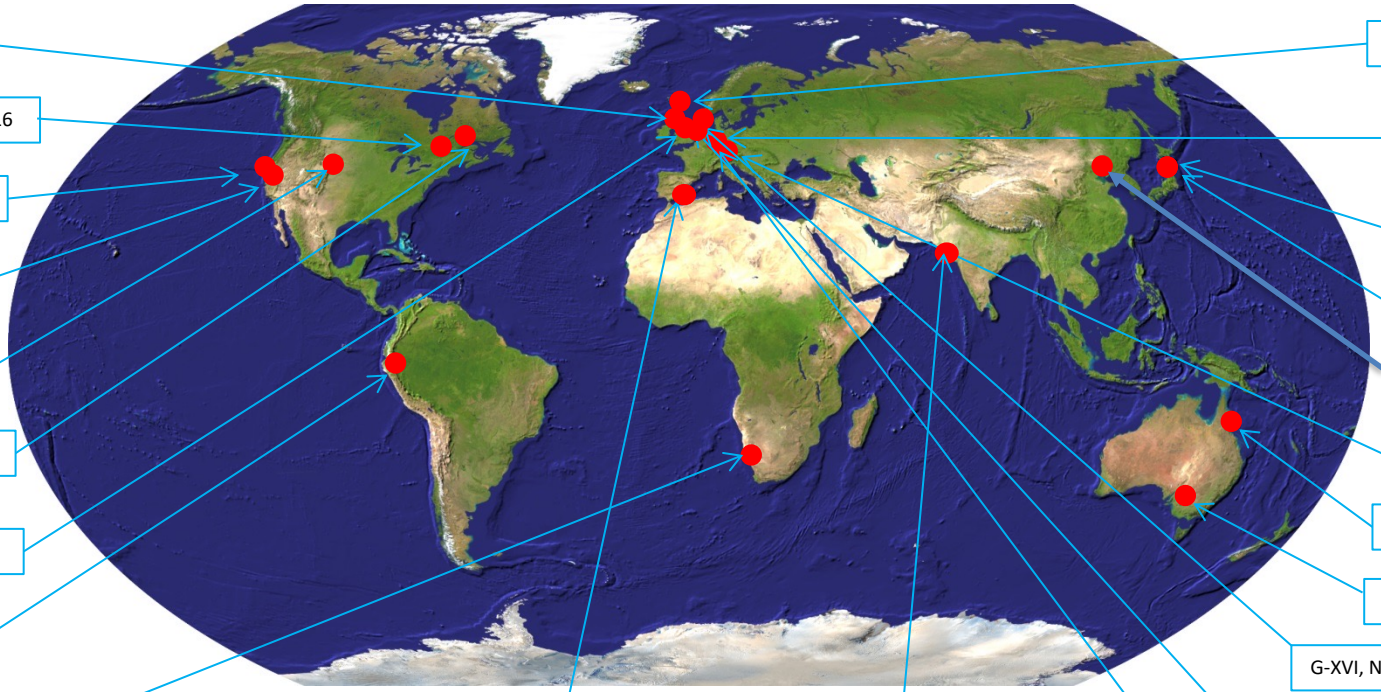
More than 100 SST products follow GHRSST data specifications.

A new system, with decentralisation of data ingestion and distribution, was designed in 2022 to prepare GHRSST for future growth and facilitate the integration of new data producers (Data producers, GDPs and Distributing centres, DACs).

https://www.ghrsst.org/about-ghrsst/task-teams/task-team-on-evolution-of-the-regional-global-task-sharing-r-g-ts-tt/



Annual Science Team Meetings



G-VI, Exeter, 2005

G-XVII, Washington DC, 2016

G-X, Santa Rosa, 2009

G-IV, Pasadena, 2003

G-VII, Boulder, 2006

G-XIV, Woods Hole, 2013

G-IX, Perros Guirrec, 2008

G-XI, Lima, 2010

G-XV, Cape Town, 2014

G-XXI, online, 2020

G-XXII, online, 2021

G-XXIII, Barcelona and online, 2022

G-XXIV, Ahmedabad and online, 2023

G-XII, Edinburgh, 2011

G-1, Ispra, 2000

G-II, Tokyo, 2002

G-XIII, Tokyo, 2012

G-XVIII, Qingdao 2017

G-III, Frascati, 2002

G-V, Townsville, 2004

G-VIII, Melbourne, 2007

G-XVI, Noordwijk, 2015

G-XIX, Darmstadt, 2018

G-XX, Frascati, 2019

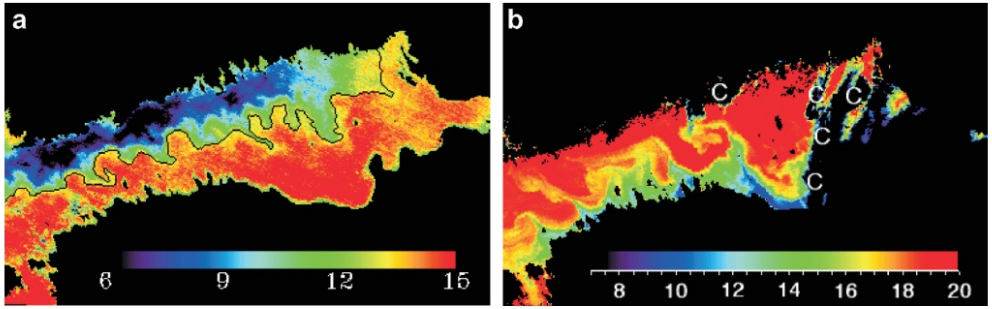
New possibilities with higher resolution

- SST changes on all spatial scales
- New instruments offer new opportunities and challenges

Baltic Sea Cyanobacterial bloom, July 27, 2017

USGS/NASA Landsat Program, processed by SYKE

Upwelling, Gulf of Finland, 24 Sep, 2003, 25 Aug, 2006



Uiboupin, R., & Laanemets, J. (2009)

Outcome of GHRSST XXIII, Barcelona 2022

- Need for very high resolution SSTs (<100 m) in coastal zones and marginal ice zones within, e.g. Copernicus Marine data streams and applications
- Coastal SST user needs will grow in coming years. Important to coordinate internationally
- High resolution SSTs identified as a GHRSST priority area for the coming years
- Future missions (e.g. Trishna and LSTM) are very promising to fill the gap in SSTs.

Recommendations from GHRSST science team meeting #1

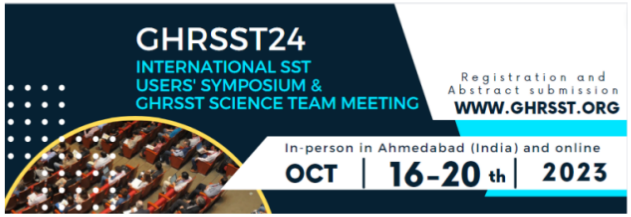
- High res SSTs products consistent with existing GHRSST products:
  - Data formats
  - SST retrievals and cloud masking
  - Quality of retrieved SST
  - Uncertainty components
- Open access to SST products
- High quality (Fiducial Reference Measurements) in situ observations should be used for validation.

Recommendations from GHRSST science team meeting #2

- Integrate high-resolution SST with validation and SST intercomparisons
- Consistency between high resolution (<100 m) and traditional (~1 km) products
- Consistency between SST and Land/MIZ/Sea Ice Surface Temperature products
- Please join GHRSST XXIV to learn more and participate in discussions

GHRSST XXIV

- International SST Users' Symposium & GHRSST int. Science Team Meeting
- Ahmedabad (India), in-person and online, 16-20 October 2023, hosted by ISRO
- Open for abstracts, see Twitter and LinkedIn for more information.
- Session on high resolution satellite missions



Call for abstracts #GHRSST24 now open!

Thank You

The Danish Meteorological Institute

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Committee on Earth Observation Satellites
Sea Surface Temperature Virtual Constellation