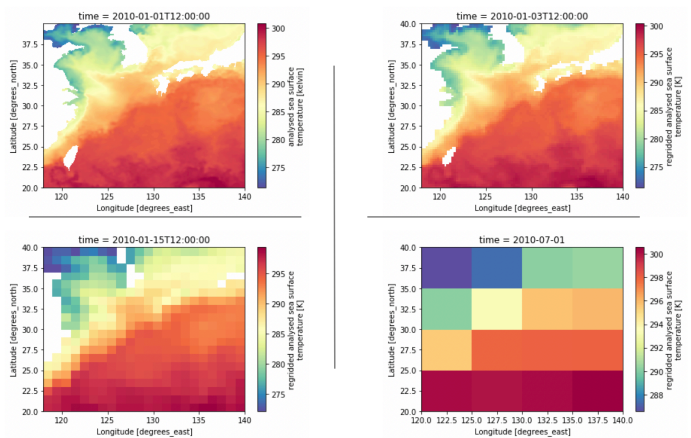


Data reduction service for the v2.1 sea surface temperature analysis from the ESA Climate Change Initiative

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Key points:

- Read our paper on the SST climate data record [10.1038/s41597-019-0236-x](https://doi.org/10.1038/s41597-019-0236-x)
- Is our daily 0.05° gap-filled analysis useful to you at coarser resolution?
- If yes, go to <http://surftemp.net/regridding/index.html>
- Request CCI analysis SSTs or anomalies at coarser resolution



Details below:

- Options for target resolutions
- Climatology for anomaly calculations
- Options for dealing with SST around sea ice
- Uncertainty propagation

(UL) Original (UR) Pentadal 0.25 degree (LL) Monthly 1.0 degree (LR) Annual 5.0 degree

<p><u>Options for target resolutions</u></p> <p>Annual Monthly Dekad (1st - 10th, 11th - 20th, 21st to end, per month) Pentad (1st - 5th, 6th - 10th, etc, per month) N-day (starts each year on 1 January)</p> <p>0.1, 0.15, 0.2, 0.25, 0.3, 0.4, ... 1.0, ... 5.0 degrees. These are multiples of 0.05 degrees that divide evenly into 360 degrees. Latitude and longitude resolutions can be different.</p>	<p><u>Options for SST around sea ice</u></p> <p>The CCI analysis SSTs blend to 271.35 K at regions of ocean fully covered with ice. There are no real SST observations under sea ice, and marginal ice zones mix the influence of real SST observations with assumed freezing-point SSTs under nearby continuous ice. The option is provided to include in the regridded calculations only SSTs from areas in the full resolution analysis that are associated with sea ice fractions less than a threshold. Typical usage would be to set the exclusion threshold to 100% (use all SSTs in the analysis, including under sea ice) or 15% (only use SSTs from relatively open-ocean ice free areas). Additionally, inclusion of regridded sea ice fraction in the outputs is optionally available. The sea ice data are from Sea Ice CCI.</p>
<p><u>Uncertainty propagation</u></p> <p>Every SST should have an uncertainty evaluation associated with it. The uncertainties in the regridded product are derived from the CCI analysis uncertainty values using an approximate propagation based on the "effective number of independent observations". Independent observations are those more separated in time and space than user-selectable length scales of temporal and spatial error correlation. Default assumptions are provided.</p>	<p><u>Climatology</u></p> <p>Instead of absolute SST, regridded SST anomaly can be selected. The daily 0.05 degree climatology used for reference is based on averaging the CCI analysis SSTs for the period 1 January 1982 to 31 December 2010 -- i.e., the nearest set of whole years available approximating the standard climatology period of 30 years from 1981 to 2010.</p> <p>The climatology uses all analysis SSTs rather than ice-free SSTs, and therefore embodies the assumed freezing temperature of sea water in ice-covered regions (see "Options for SST around sea ice").</p>



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→ SEA SURFACE TEMPERATURE

