

Manual for download data from PODAAC using MATLAB (with specific Area and Period)

How to write the MATLAB Script for download data?

1. Access the Product webpage in the PODAAC



The screenshot shows the PODAAC website interface. At the top, there's a header with the NASA logo, Jet Propulsion Laboratory, and California Institute of Technology. The main navigation bar includes links for HOME, FIND DATA, ACCESS DATA, RESOURCES, ABOUT, HELP, and CLOUD DATA. A search bar is also present. Below the header, the page title is "Home » Dataset Discovery". The dataset being viewed is "GHR SST Level 4 MUR Global Foundation Sea Surface Temperature Analysis (v4.1) (MUR-JPL-L4-GLOB-v4.1)". A sidebar on the right shows "160 Publications Cited this Dataset" and a "SHARE THIS PAGE" button. The main content area has tabs for Information, Coverage, Data Access, Variables, Documentation, Citation, and Version History. The "Information" tab is active, displaying details about the dataset: Version 4.1, Processing Level 4, Start/Stop Date 2002-May-31 to Present, Short Name MUR-JPL-L4-GLOB-v4.1, and a detailed Description. A world map visualization is shown on the right, labeled "CLOUD ENABLED".

Home » Dataset Discovery

GHR SST Level 4 MUR Global Foundation Sea Surface Temperature Analysis (v4.1)
(MUR-JPL-L4-GLOB-v4.1)

160 Publications Cited this Dataset
Citation metrics available for years (2014-2022)

Information Coverage Data Access Variables Documentation Citation Version History

Version 4.1

Processing Level 4

Start/Stop Date 2002-May-31 to Present

Short Name MUR-JPL-L4-GLOB-v4.1

Description A Group for High Resolution Sea Surface Temperature (GHR SST) Level 4 sea surface temperature analysis produced as a retrospective dataset (four day latency) and near-real-time dataset (one day latency) at the JPL Physical Oceanography DAAC using wavelets as basis functions in an optimal interpolation approach on a global 0.01 degree grid. The version 4 Multiscale Ultrahigh Resolution (MUR) L4 analysis is based upon nighttime GHR SST L2P skin and subskin SST observations from several instruments including the NASA Advanced Microwave Scanning

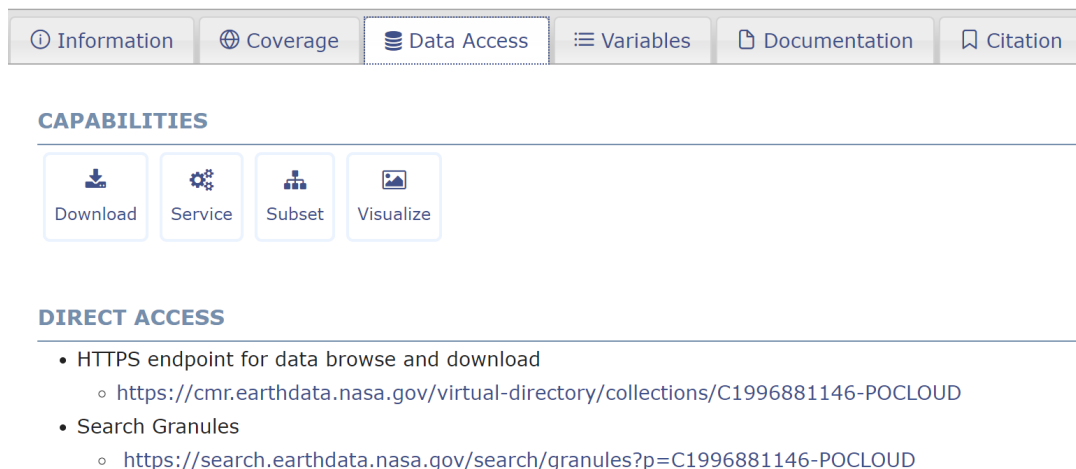
Status: ACTIVE

Short Name: MUR-JPL-L4-GLOB-v4.1

Collection Concept ID: C1996881146-POCLOUD

Spatial Coverage:
N: 90° S: -90°
E: 180° W: -180°

2. Click **Data Access**



The screenshot shows the "Data Access" section of the PODAAC website. It features a navigation bar with tabs for Information, Coverage, Data Access, Variables, Documentation, and Citation. The "Data Access" tab is active. Below the navigation bar, there's a section titled "CAPABILITIES" with four icons: Download, Service, Subset, and Visualize. Below this, there's a section titled "DIRECT ACCESS" with two bullet points: "HTTPS endpoint for data browse and download" and "Search Granules". The first bullet point includes a link: <https://cmr.earthdata.nasa.gov/virtual-directory/collections/C1996881146-POCLOUD>. The second bullet point includes a link: <https://search.earthdata.nasa.gov/search/granules?p=C1996881146-POCLOUD>.

Information Coverage Data Access Variables Documentation Citation

CAPABILITIES

Download Service Subset Visualize

DIRECT ACCESS

- HTTPS endpoint for data browse and download
 - <https://cmr.earthdata.nasa.gov/virtual-directory/collections/C1996881146-POCLOUD>
- Search Granules
 - <https://search.earthdata.nasa.gov/search/granules?p=C1996881146-POCLOUD>

3. **DIRECT ACCESS** > access **HTTPS Link**



GHR SST Level 4 MUR Global Foundation Sea Surface Temperature Analysis (v4.1)

Sort By	File Count
Temporal	8161

4. You have to "Sign In" and Choose 'sample day' for get the longitude, latitude information.

GHR SST Level 4 MUR Global Foundation Sea Surface Temperature Analysis (v4.1) [temporal](#) [2002](#) [05](#) [31](#)

Granule Download	Other Links
20020601090000-JPL-L4_GHR SST-SSTfnd-MUR-GLOB-v02.0-fv04.1	OPeNDAP

5. Click the [Opendap](#) and set the option like below

- Download Encoding : [NetCDF-4](#)
- add the Variables : "[lat](#)" and "[lon](#)"

dataset: 20020601090000-JPL-L4_GHR SST-SSTfnd-MUR-GLOB-v02.0-fv04.1.nc

Actions Download Encoding: [NetCDF-4](#) [Get Data](#)

Data URL <https://opendap.earthdata.nasa.gov/providers/POCLOUD/collections/GHR SST%20Level%204%20v02.0-fv04.1.nc>
[Copy encoded Data URL](#) [Copy raw Data URL](#)

Global Attributes [View/Hide](#)

Global Dimensions [View/Hide](#)

Variables

☐ time[/time= 0..0] (Type is Int32)
[attributes](#)

☒ lat[/lat= 0..17998] (Type is Float32)
[0:1:17998](#)
[attributes](#)

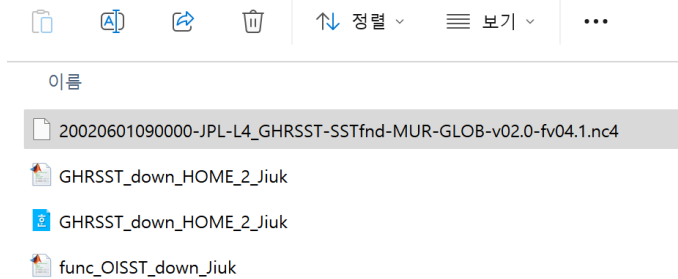
☒ lon[/lon= 0..35999] (Type is Float32)
[0:1:35999](#)
[attributes](#)

6. Click [Get Data](#)

7. Make new folder for MATLAB Workspace.

Move the nc file in the new folder

(You can change the name of nc file)



8. Open the new MATLAB script and read the longitude, latitude information of the NC file.

```
%% read 'lon', 'lat' data from NC file
clc; clear;

fnm = 'sample_lonlat_20020601_MUR_41.nc4';
ncdisp(fnm)

lon = ncread(fnm, 'lon');
lat = ncread(fnm, 'lat');
```

9. Find the index of region where you want to download

```
Spatial_area = [24, 35, 121, 132];

idlat(1) = findnearpoint(lat, Spatial_area(1));
idlat(2) = findnearpoint(lat, Spatial_area(2));
idlon(1) = findnearpoint(lon, Spatial_area(3));
idlon(2) = findnearpoint(lon, Spatial_area(4));

function id = findnearpoint(base, target)
% find nearest point of "target" from "base"
[~, id] = min(abs(base-target));
end
```

10. Prepare the period information with proper format

```
period = [2014, 1, 1; 2014, 1, 5];
period2 = datetime(period);
period3 = period2(1):days(1):period2(2);
```

11. Back to the website - Add the Variables (time and variables you want) - [Copy raw Data Link](#)

Dataset: 20020601090000-JPL-L4_GHRSSST-SSTfnd-MUR-GLOB-v02.0-fv04.1.nc

Actions Download Encoding: NetCDF-4 Get Data

Data URL [https://opendap.earthdata.nasa.gov/providers/POCLOUD/collections/GHRSSST%20Level%204%20MUR%20v02.0-fv04.1.dap.nc4?dap4.ce=/time\[0:1:0\];/lat\[0:1:17998\];/lon\[0:1:35999\];/analysed_sst\[0:1:0\]\[0:1:17998\]\[0:1:35999\]](https://opendap.earthdata.nasa.gov/providers/POCLOUD/collections/GHRSSST%20Level%204%20MUR%20v02.0-fv04.1.dap.nc4?dap4.ce=/time[0:1:0];/lat[0:1:17998];/lon[0:1:35999];/analysed_sst[0:1:0][0:1:17998][0:1:35999])
Copy encoded Data URL Copy raw Data URL

Global Attributes View/Hide

Global Dimensions View/Hide

Variables

- ☒ **time** [/time= 0..0] (Type is Int32)

attributes
 - long_name**: reference time of sst field (Type is String)
 - standard_name**: time (Type is String)
 - axis**: T (Type is String)
 - units**: seconds since 1981-01-01 00:00:00 UTC (Type is String)
 - comment**: Nominal time of analyzed fields (Type is String)
- ☒ **lat** [/lat= 0..17998] (Type is Float32)

attributes
- ☒ **lon** [/lon= 0..35999] (Type is Float32)

attributes
- ☒ **analysed_sst** [/time= 0..0] [/lat= 0..17998] [/lon= 0..35999] (Type is Int16)

attributes

12. If the url is like this,

[https://opendap.earthdata.nasa.gov/providers/POCLOUD/collections/GHRSSST Level 4 MUR Global Foundation Sea Surface Temperature Analysis \(v4.1\)/granules/20020601090000-JPL-L4_GHRSSST-SSTfnd-MUR-GLOB-v02.0-fv04.1.dap.nc4?dap4.ce=/time\[0:1:0\];/lat\[0:1:17998\];/lon\[0:1:35999\];/analysed_sst\[0:1:0\]\[0:1:17998\]\[0:1:35999\]](https://opendap.earthdata.nasa.gov/providers/POCLOUD/collections/GHRSSST Level 4 MUR Global Foundation Sea Surface Temperature Analysis (v4.1)/granules/20020601090000-JPL-L4_GHRSSST-SSTfnd-MUR-GLOB-v02.0-fv04.1.dap.nc4?dap4.ce=/time[0:1:0];/lat[0:1:17998];/lon[0:1:35999];/analysed_sst[0:1:0][0:1:17998][0:1:35999])

Then, you can split this link into like this

- [https://opendap.earthdata.nasa.gov/providers/POCLOUD/collections/GHRSSST Level 4 MUR Global Foundation Sea Surface Temperature Analysis \(v4.1\)/granules/](https://opendap.earthdata.nasa.gov/providers/POCLOUD/collections/GHRSSST Level 4 MUR Global Foundation Sea Surface Temperature Analysis (v4.1)/granules/)
- 20020601
- 090000-JPL-L4_GHRSSST-SSTfnd-MUR-GLOB-v02.0-fv04.1.dap.nc4?dap4.ce=
- /time[0:1:0];/lat[0:1:17998];/lon[0:1:35999];/analysed_sst[0:1:0][0:1:17998][0:1:35999]

Then, you should change the "2" and "4" in the MATLAB.

13. The example is like this.

```
%% load data with URL
```

```
% If the downloaded file has the SAME NAME, INCREASE the value of lag_time
lag_time = 3; % seconds between download each files
```

```

for loop = 1:length(period3)
    period4 = period3(loop); period5 = datevec(period4); period5 = period5(1:3);
    period6 = sprintf("%d%02.0f%02.0f", period5);

    url1 = "https://opendap.earthdata.nasa.gov/providers/POCLOUD/collections/'
        "GHR SST%20Level%204%20MUR%20Global%20Foundation%20Sea%20Surface%20Temp
        "/granules/";

    url2 = period6;

    url3 = "090000-JPL-L4_GHR SST-SSTfnd-MUR-GLOB-v02.0-fv04.1.dap.nc4?dap4.ce=

    url4 = sprintf("/time[0:1:0];/lat[%d:1:%d];/lon[%d:1:%d];/analysed_sst[0:1:0];/idlat(1)-1, idlat(2)-1, idlon(1)-1, idlon(2)-1, ...
        idlat(1)-1, idlat(2)-1, idlon(1)-1, idlon(2)-1);

    url5 = strcat(url1, url2, url3, url4);
    web(url5)

    pause(lag_time);
end

```

Finally, you can automatically download the data!

