CMDA Universal Analysis

https://jpl-cmda.org/cmda.html

User Manual

August, 2022

jpl-cmda.org/cmda.html

Universal Analysis Service

This is a tool that includes several services (plotting, EOF, random forest importance, difference of two fields, lagged correlation). Datasets can be searched by time range, by name, by provider, by variable name, etc. NetCDF files can also be uploaded, and online files served by OPeNDAP can also be used in the analysis.

1. Select Service

Select Service:

Color Plot Number of datasets: 1

Click the box to see the pull-down menu of various services.

Select Datasets and Variables

Search Filename/varNames/title: (info)

Filter by Variables Short Names: Select Variables

Filter by Variables Longname: Select Variables by Longname

Filter Files There are 0 filtered datasets.

Select Datasets: Number of selected datasets: 0

Pick a basin:

Display Options:

Color Level Type (just an example)(info): 10 levels Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Purpose:

Analyse Data Download Data

Browser URL: Service URL Browser URL Open a page with the browserUrl

Data File URL:

Service Response Text:

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1. Select Service

Choose the service from the pull-down menu.

Select Service:

- ✓ Color Plot
- Contour Plot
- Contour Plot Overlaying a Color Plot
- Subset and Download
- Download Original
- EOF: Empirical Orthogonal Functions
- Random Forest, Feature Importance
- Linear Combination of Multiple Variables
- Time Series Plots
- Map View of Multiple Variables
- Scatter Plot of Two Fields
- Difference of Two Fields
- Lagged Correlation of Two Fields

Number of datasets: 1

Search Filename/varNames/title: (info

Filter by Variables Short Names

Filter by Variables Longname

Filter Files

Select Datasets:

Pick a basin

Color Level Type (just an example)(info)

Modify It: 10

Specify Colormap

Plot Title

Analysis Purpose

Analyse Data

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jpl-cmda.org/cmda.html

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2. Select Datasets and Variables

Select Service:

Color Plot — Number of datasets: 1 . Number of dimensions: 2

Select Datasets and Variables

Search Filename/varNames/title: (info) nasa, airs

Filter by Variables Short Names: Select Variables

Filter by Variables Longname: Select Variables by Longname

Filter Files

There are 0 filtered datasets.

Number of selected datasets: 0

Search datasets by typing keywords, variable short name or long name.

Select Datasets:

Pick a basin:

Display Options:

Color Level Type (just an example)(info): 10 levels — Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Details:

Analyse Data | Download Data

Browser URL:

Service URL | Browser URL | Open a page with the browserUrl

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jpl-cmda.org/cmda.html

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Select Datasets and Variables

Search Filename/varNames/title: (info) nasa, airs

Filter by Variables Short Names: Select Variables

Filter by Variables Longname: Select Variables by Longname

Filter Files

There are 3 filtered datasets.

Number of selected datasets: 0

Click "Filter Files".

Filtered datasets show up in a table.

Select Datasets:

		fileName	var name	var long name	units	lon start	lon end	lon res	lat start	lat end	lat res	vertical levels	time start	time end	var list if number of vars > 1
		data/data_clean/cmip5/nasa/airs/hus_AIRS_L3_RetStd-v5_200209-201105.nc:	hus	Specific Humidity	1	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
		data/data_clean/cmip5/nasa/airs/ta_AIRS_L3_RetStd-v5_200209-201105.nc:	ta	Air Temperature	K	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
		data/data_clean/cmip5/nasa/airs/tas_AIRS_200209-201609.nc:	tas	Near-Surface Air Temperature	K	-179.5	179.5	1	-179.5	179.5	1		20020915	20160915	

Pick a basin:

Display Options:

Color Level Type (just an example)(info): 10 levels — Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Details:

Analyse Data | Download Data

Browser URL: Service URL | Browser URL | Open a page with the browserUrl

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Select Service:

Color Plot — Number of datasets: 1 . Number of dimensions: 2

Select Datasets and Variables

Search Filename/varNames/title: (info) nasa, airs

Filter by Variables Short Names: Select Variables

Filter by Variables Longname: Select Variables by Longname

Filter Files

There are 3 filtered datasets.

Number of selected datasets: 1

Click the box next to the dataset you want to select.

Select Datasets:

		fileName	var name	var long name	units	lon start	lon end	lon res	lat start	lat end	lat res	vertical levels	time start	time end	var list if number of vars > 1
	☐	data/data_clean/cmip5/nasa/airs/hus_AIRS_L3_RetStd-v5_200209-201105.nc:	hus	Specific Humidity	1	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
	☐	data/data_clean/cmip5/nasa/airs/ta_AIRS_L3_RetStd-v5_200209-201105.nc:	ta	Air Temperature	K	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
1	☑	data/data_clean/cmip5/nasa/airs/tas_AIRS_200209-201609.nc:	tas	Near-Surface Air Temperature	K	-179.5	179.5	1	-179.5	179.5	1		20020915	20160915	

Data Subsetting

Data Subsetting Box shows up.

longitude (deg): form an axis 0 360

latitude (deg): form an axis -90 90

Time (year-month-day): pick a value 2000-01-15

Preset Time Range: At Beginning | +1 year | -1 year | At End

Dataset Time Range: **2002-09-15 to 2016-09-15**

Pick a basin:

Display Options:

Color Level Type (just an example)(info): 10 levels — Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Details:

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Universal Analysis Service

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3. Subset Data

Select Service:

Color Plot — Number of datasets: 1 . Number of dimensions: 2

Select Datasets and Variables

Search Filename/varNames/title: (info) nasa, airs

Filter by Variables Short Names: Select Variables

Filter by Variables Longname: Select Variables by Longname

Filter Files

There are 3 filtered datasets.

Select Datasets: Number of selected datasets: 1

		fileName	var name	var long name	units	lon start	lon end	lon res	lat start	lat end	lat res	vertical levels	time start	time end	var list if number of vars > 1
	☐	data/data_clean/cmip5/nasa/airs/hus_AIRS_L3_RetStd-v5_200209-201105.nc:	hus	Specific Humidity	1	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
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1	☑	data/data_clean/cmip5/nasa/airs/tas_AIRS_200209-201609.nc:	tas	Near-Surface Air Temperature	K	-179.5	179.5	1	-179.5	179.5	1		20020915	20160915	

Data Subsetting

longitude (deg): form an axis 0 360

latitude (deg): form an axis -90 90

Time (year-month-day): pick a value 2000-01-15

Preset Time Range: At Beginning | +1 year | -1 year | At End

Dataset Time Range: **2002-09-15 to 2016-09-15**

Pick a basin:

Choose data subsetting options.

Display Options:

Color Level Type (just an example)(info): 10 levels — Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Details:

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3. Subset Data

Select Service:

Color Plot — Number of datasets: 1 . Number of dimensions: 2

Select Datasets and Variables

Search Filename/varNames/title: (info) nasa, airs

Filter by Variables Short Names: Select Variables

Filter by Variables Longname: Select Variables by Longname

Filter Files

There are 3 filtered datasets.

Select Datasets: Number of selected datasets: 1

		fileName	var name	var long name	units	lon start	lon end	lon res	lat start	lat end	lat res	vertical levels	time start	time end	var list if number of vars > 1
	☐	data/data_clean/cmip5/nasa/airs/hus_AIRS_L3_RetStd-v5_200209-201105.nc:	hus	Specific Humidity	1	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
	☐	data/data_clean/cmip5/nasa/airs/ta_AIRS_L3_RetStd-v5_200209-201105.nc:	ta	Air Temperature	K	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
1	☑	data/data_clean/cmip5/nasa/airs/tas_AIRS_200209-201609.nc:	tas	Near-Surface Air Temperature	K	-179.5	179.5	1	-179.5	179.5	1		20020915	20160915	

Data Subsetting

longitude (deg): form an axis — 0 — 360

latitude (deg): form an axis — -90 — 90

Time (year-month-day): ✓ pick a value — 2000-01-15

Preset Time Range: average over — +1 year — -1 year — At End

sum over

form an axis

Dataset Time Range: 6-09-15

Pick a basin:

Click the pull-down bar to choose action:

- pick a value
- average over
- sum over
- form an axis

Display Options:

Color Level Type (just an example)(info): 10 levels — Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Details:

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3. Subset Data

Select Service:

Color Plot — Number of datasets: 1 . Number of dimensions: 2

Select Datasets and Variables

Search Filename/varNames/title: (info) nasa, airs

Filter by Variables Short Names: Select Variables

Filter by Variables Longname: Select Variables by Longname

Filter Files

There are 3 filtered datasets.

Number of selected datasets: 1

Select Datasets:

		fileName	var name	var long name	units	lon start	lon end	lon res	lat start	lat end	lat res	vertical levels	time start	time end	var list if number of vars > 1
	☐	data/data_clean/cmip5/nasa/airs/hus_AIRS_L3_RetStd-v5_200209-201105.nc:	hus	Specific Humidity	1	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
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Data Subsetting

Type the values to determine the range.

longitude (deg):	form an axis	0	360
latitude (deg):	form an axis	-90	90
Time (year-month-day):	average over	2002-09-15	2016-09-15

Preset Time Range: One Year | Add 1 Year | Reduce 1 Year | Full Range

Time Procession: ☐ Use Anomaly ☐ Yearly Mean ☐ Quarterly Mean

Dataset Time Range: **2002-09-15 to 2016-09-15**

Pick a basin:

Display Options:

Color Level Type (just an example)(info): 10 levels — Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Details:

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3. Select Display Options

Select Service:

Color Plot — Number of datasets: 1 . Number of dimensions: 2

Select Datasets and Variables

Search Filename/varNames/title: (info) nasa, airs

Filter by Variables Short Names: Select Variables

Filter by Variables Longname: Select Variables by Longname

Filter Files

There are 3 filtered datasets.

Number of selected datasets: 1

Select Datasets:

		fileName	var name	var long name	units	lon start	lon end	lon res	lat start	lat end	lat res	vertical levels	time start	time end	var list if number of vars > 1
	☐	data/data_clean/cmip5/nasa/airs/hus_AIRS_L3_RetStd-v5_200209-201105.nc:	hus	Specific Humidity	1	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
	☐	data/data_clean/cmip5/nasa/airs/ta_AIRS_L3_RetStd-v5_200209-201105.nc:	ta	Air Temperature	K	0.5	359.5	1	0.5	359.5	1	mouse hover	20020916	20110516	
1	☑	data/data_clean/cmip5/nasa/airs/tas_AIRS_200209-201609.nc:	tas	Near-Surface Air Temperature	K	-179.5	179.5	1	-179.5	179.5	1		20020915	20160915	

Data Subsetting

longitude (deg): form an axis | 0 | 360

latitude (deg): form an axis | -90 | 90

Time (year-month-day): average over | 2002-09-15 | 2016-09-15

Preset Time Range: One Year | Add 1 Year | Reduce 1 Year | Full Range

Time Procession: ☐ Use Anomaly ☐ Yearly Mean ☐ Quarterly Mean

Dataset Time Range: **2002-09-15 to 2016-09-15**

Pick a basin:

Display Options:

Color Level Type (just an example)(info): 10 levels — Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Details:

Choose from pull-down menu and type values.

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4. Submit an Analysis Run

Select Service:

Color Plot — Number of datasets: 1 . Number of dimensions: 2

Select Datasets and Variables

Search Filename/varNames/title: (info) nasa, airs

Filter by Variables Short Names: tas ×

Filter by Variables Longname: Select Variables by Longname

Filter Files — There are 1 filtered datasets.

Select Datasets: Number of selected datasets: 1

		fileName	var name	var long name	units	lon start	lon end	lon res	lat start	lat end	lat res	vertical levels	time start	time end	var list if number of vars > 1
1	☑	data/data_clean/cmip5/nasa/airs/tas_AIRS_200209-201609.nc:	tas	Near-Surface Air Temperature	K	-179.5	179.5	1	-179.5	179.5	1		20020915	20160915	

Data Subsetting

longitude (deg): form an axis | 0 | 360

latitude (deg): form an axis | -90 | 90

Time (year-month-day): average over | 2002-09-15 | 2016-09-15

Preset Time Range: One Year | Add 1 Year | Reduce 1 Year | Full Range

Time Procession: ☐ Use Anomaly ☐ Yearly Mean ☐ Quarterly Mean

Dataset Time Range: **2002-09-15 to 2016-09-15**

Pick a basin:

Display Options:

Color Level Type (just an example)(info): 10 levels — Modify It: 10

Specify Colormap: rainbow

Plot Title:

Analysis Details:

Click "Analyse Data" box.

Analyse Data | Download Data

Browser URL: Service URL | Browser URL | Open a page with the browserUrl

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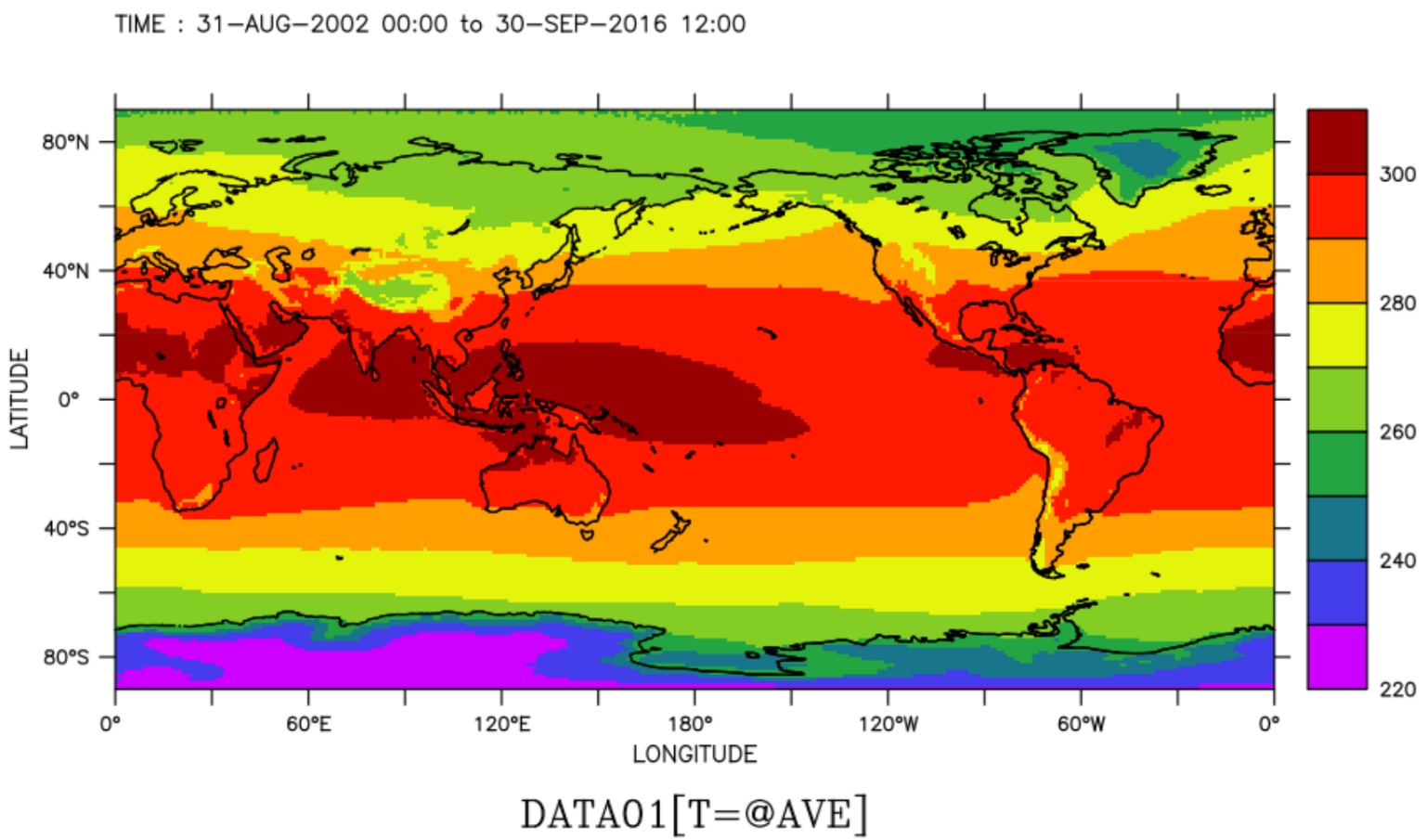
Analyse Data | Download Data

Browser URL:

Service URL | Browser URL | Open a page with the browserUrl

4. Submit an Analysis Run

The analysis result shows up in the box below.
If the result is an image, you can save the image to your local server.



jpl-cmda.org/cmda.html

Analyse Data

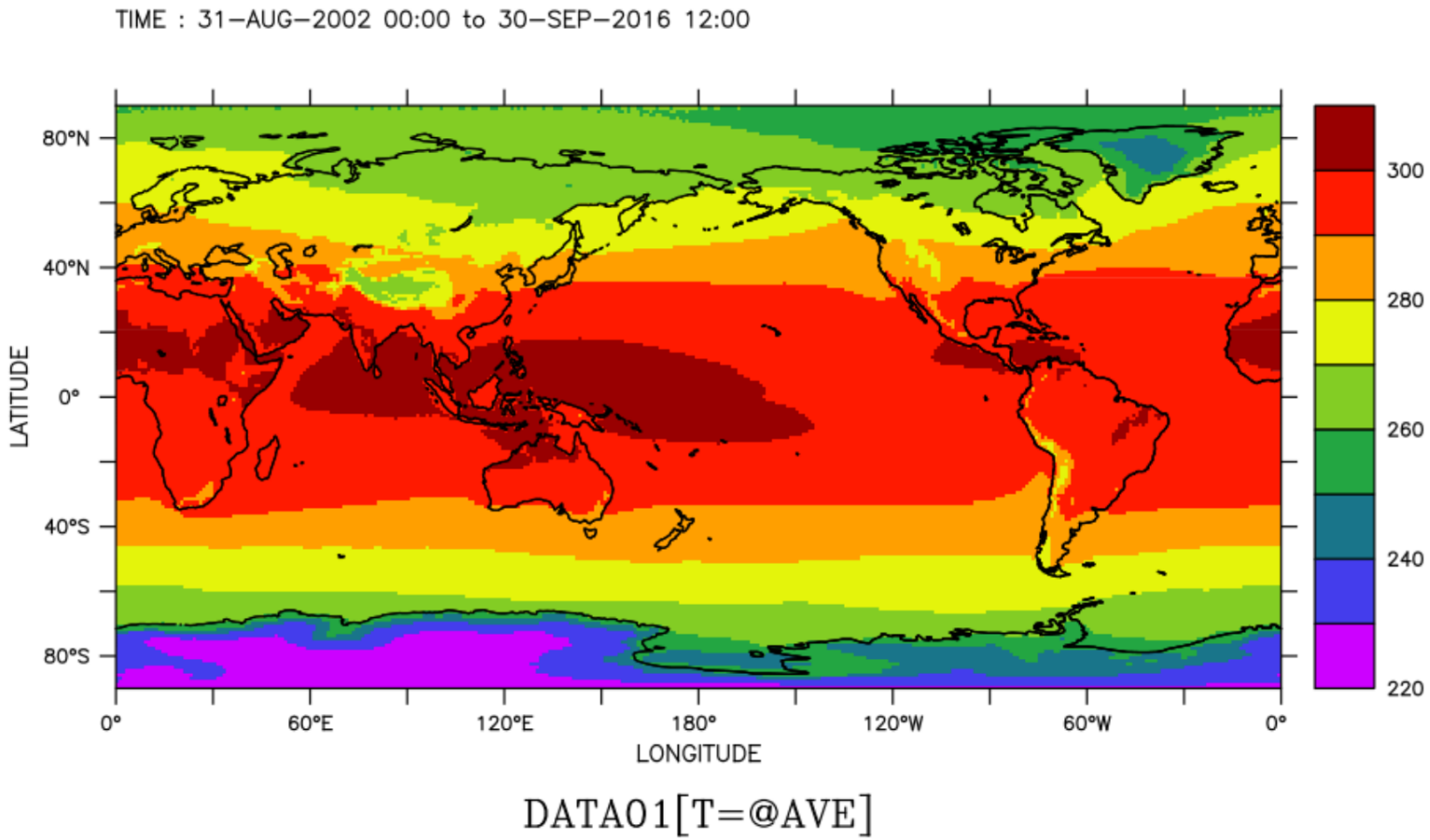
Download Data

Browser URL:

Service URL | Browser URL | Open a page with the browserUrl

5. Download the Analysis Result

Click “Download Data” to download the analysis result in NetCDF file.



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Analyse Data | Download Data

Browser URL:

Service URL | Browser URL | Open a page with the browserUrl

https://jpl-cmda.org/svc/universalPlotting6b?vars=tas&datasets=/mnt/data/data_clean/cmip5/nasa/airs/tas_AIRS_200209-201609.nc&lonMethod=3&lonS=0&lonE=360&latMethod=3&latS=-90&latE=90&presMethod=0&presS=500&presE=800&timeMethod=2&timeS=2002-09-15&timeE=2016-09-15&ferretLevel=10&colorMap=rainbow&plotTitle=&anomaly=0&climatology=undefined&timeMean=&purpose=&service=plot&basin=&userId=&serviceId=&dataUrl=https%3A//jpl-cmda.org/static/universalPlotting6b/554bcb828d85139b83594dc57724d220/data.nc&plotUrl=https%3A//jpl-cmda.org/static/universalPlotting6b/554bcb828d85139b83594dc57724d220/plot.png

6. Generate a Service URL text

Click “Service URL” to generate a service URL text, which you can copy over to an API call function in Jupyter Notebook.