

JMA/TCC Training Seminar

Basic GUI concept in ITACS

December 1, 2009

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Climate Prediction Division, JMA

Setting Parameters

data1: Parameters for drawing chart

dataset	element	data type	area	level	average period	show period
JRA-JCDAS	Geopotential height(ɡpm) Vector <input type="checkbox"/> SD <input type="checkbox"/>	ANOM	ALL Lat: 20 - 90 Ave <input type="checkbox"/> Lon: -45 - 315 Ave <input type="checkbox"/>	500 hPa 500 hPa	MONTHLY Ave <input type="checkbox"/>	RANGE 2008 01 2008 01

data2: Parameter about another data to overlay or for statistical analysis

dataset	element	data type	area	level	average period	show period
JRA-JCDAS	Geopotential height(ɡpm) SD <input type="checkbox"/>	HIST	ALL Lat: 20 - 90 Ave <input type="checkbox"/> Lon: -45 - 315 Ave <input type="checkbox"/>	500 hPa 500 hPa	MONTHLY Ave <input type="checkbox"/>	RANGE 2008 01 2008 01

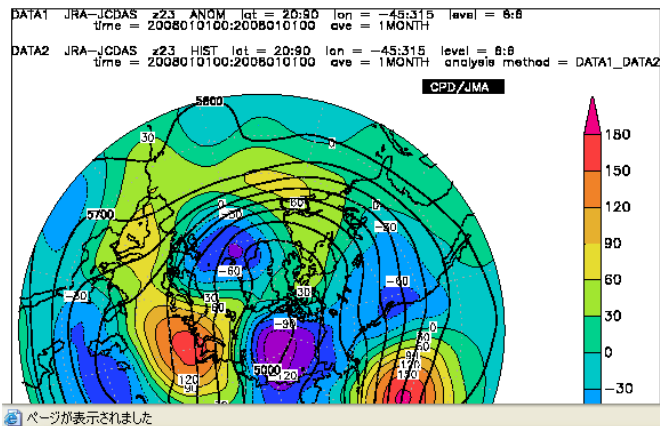
Graphic Option

Show Contour Labels
 Show Color Bar
Colorizing : COLOR
Drawing : SHADE
Image Format : png

Set Contour Parameters for data1
interval : min : max :
 Set Contour Parameters for data2
interval : min : max :

Color Table : Rainbow
 No Scale Labels
 Polar Stereographic : North pole
 Draw Credit Inside
 Logarithmic Coordinates
 Reverse the Axes
 Flip the X-axis Flip the Y-axis
 No Caption

Graphic options: Options about color, projection, contour, and so on.



(1) Dataset

- JRA-JCDAS
- SAT
- SST
- MOVE-G
- ODAS
- CLIMAT
- USERINPUT
- INDEX

(2) Element

- Velocity potential
- Pressure vertical velocity
- Stream function
- Surface pressure to MSL
- Air temperature
- Zonal wind
- Meridional wind
- Zonal wind divergence
- Meridional wind divergence
- Calc Zonal component of wave activity flux
- Calc Meridional component of wave activity flux
- Geopotential height

(3) Data Type

- HIST
- NORM
- ANOM
- ANOM_SD

dataset	element	data type	area	level	average period	show period
-Dataset-	-Element-	-Data_type-	-Area-	1000hPa	1000hPa	-Mean Period-
	Vector <input type="checkbox"/>				Ave <input type="checkbox"/>	RANGE
	SD <input type="checkbox"/>					1900
						1900

analysis method : -Analysis_method-

(4) Area

- select area
- or input latitude and longitude

Graphic Option

Show Contour Labels

Show Color Bar

Set Contour Parameters for data1

Set Vector

Colorizing : COLOR

Drawing : SHADE

Image Format : png

interval : min : max :

size : [inch] value :

Color Table : Rainbow

No Scale Labels

Polar Stereographic : North pole

Logarithmic Coordinates

Reverse the Axes

Flip the X-axis

Flip the Y-axis

No Caption

Submit Clear SliceTool Help

(7) Show Period

- RANGE (used usually)
- YEARS
- (select several years to take the average)
- INDEX
- (to show the chart under the condition of an index)

(6) Average period

- MONTH
- PENTAD DAY
- DAILY
- Direct input
- Year average
- (for interannual variations of monthly data)
- Year average pentad
- (for interannual variation of pentad data)
- Year average day
- (for interannual variation of daily data)

(5) Level

- Select vertical level.
- To show vertical cross section chart, input bottom level in upper raw and top level in lower raw.

(1) Dataset

- JRA-JCDAS
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- SST
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- HIST
- NORM
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dataset	element	data type	area	level	average period	show period
-Dataset-	-Element-	-Data_type-	-Area-	1000hPa	1000hPa	-Mean Period-

analysis method : -Analysis_method-

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Graphic Option

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 Set Contour Parameters for data1
interval : min : max :
 Set Vector size : [inch] value :

Color Table : Rainbow
 Polar Stereographic : North pole
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Dataset

Dataset	Data Description
JRA/JCDAS	Atmospheric circulation data produced by JMA's Climate Data Assimilation System (JCDAS), which is consistent quality with Japanese 25-year reanalysis (JRA-25). Normals are calculated from analyses for the period 1979-2004. For more information, please refer to the following address, http://jra.kishou.go.jp/JRA-25/index_en.html
SAT	Outgoing Longwave Radiation (OLR) , which is derived from observations by NOAA's polar orbital satellites, and provided by Climate Prediction Center (CPC) in the National Centers for Environmental Prediction (NCEP) of the National Oceanic and Atmospheric Administration (NOAA). Normals are calculated from analyses for the period 1979-2004.
ODAS	Oceanic assimilation produced by the system operated by JMA until February 2008. Normals are calculated from analyses for the period 1987-2006.
SST	Sea Surface Temperature produced by the system operated by JMA (COBE-SST) . Normals are calculated from analyses for the period 1971-2000. For more information, please refer to the following address, http://ds.data.jma.go.jp/tcc/tcc/products/elnino/cobesst_doc.html
INDEX	El Nino Monitoring Indices consisting of monthly mean Sea Surface Temperature produced by COBE-SST. Normals are calculated from the index values for the period 1971-2000. For more information, please refer to the following address, http://ds.data.jma.go.jp/tcc/tcc/products/elnino/index/Readme.txt
CLIMAT	Monthly world climate data derived from CLIMAT messages via the GTS line from WMO Members around the world. Temperature (mean temperature) and precipitation anomalies are calculated from the data for the period 1971-2000, and the other elements' anomalies for the period 1961-1990.

(1) Dataset

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(3) Data Type

- HIST
- NORM
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data1

dataset	element	data type	area	level	average period	show period
-Dataset-	-Element-	-Data_type-	-Area-	1000hPa	1000hPa	-Mean Period-
	Vector <input type="checkbox"/>				Ave <input type="checkbox"/>	RANGE
	SD <input type="checkbox"/>					1900
						1900

analysis method : -Analysis_method-

(4) Area

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 Draw Credit Inside
 No Caption

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(6) Average period

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- Select vertical level.
- To show vertical cross section chart, input bottom level in upper row and top level in lower row.

(7) Show Period

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(to show the chart under the condition of an index)

Data Type

HIST: Observed or Analyzed DATA

ANOM: Anomaly DATA

NORM: Normal DATA (In case of JRA/JCDAS, averaged from 1979 to 2004)

ANOM_SD: Anomaly DATA normalized by its standard deviation (σ)

NOTE

“HIST” minus “NORM” is “ANOM”.

“ANOM” divided by σ is “ANOM_SD”.

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Area

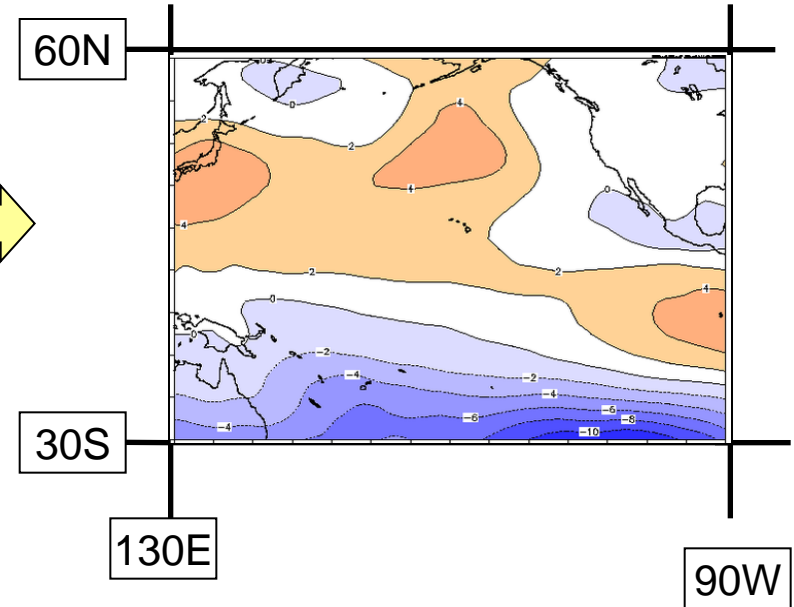
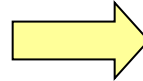
area

ALL

Lat: - Ave

Lon: - Ave

Type from your keyboard



NOTE

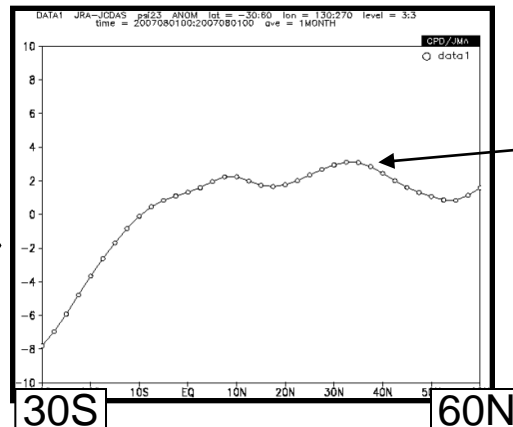
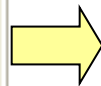
“Lat” means Latitude. For example, “Lat -30” refers to 30S.
“Lon” means Longitude.

area

ALL

Lat: - Ave

Lon: - Ave



Each point is zonally-averaged from 130E to 90W .

NOTE

“Ave” means “Averaged”.

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analysis method : -Analysis_method-

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Color Table : Rainbow

Polar Stereographic : North pole

Logarithmic Coordinates

Reverse the Axes

Flip the X-axis Flip the Y-axis

No Scale Labels

Draw Credit Inside

No Caption

Submit Clear SliceTool Help

(7) Show Period

RANGE (used usually)

YEARS

(select several years to take the average)

INDEX

(to show the chart under the condition of an index)

(6) Average period

MONTH

PENTAD DAY

DAILY

Direct input

Year average

(for interannual variations of monthly data)

Year average pentad

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Year average day

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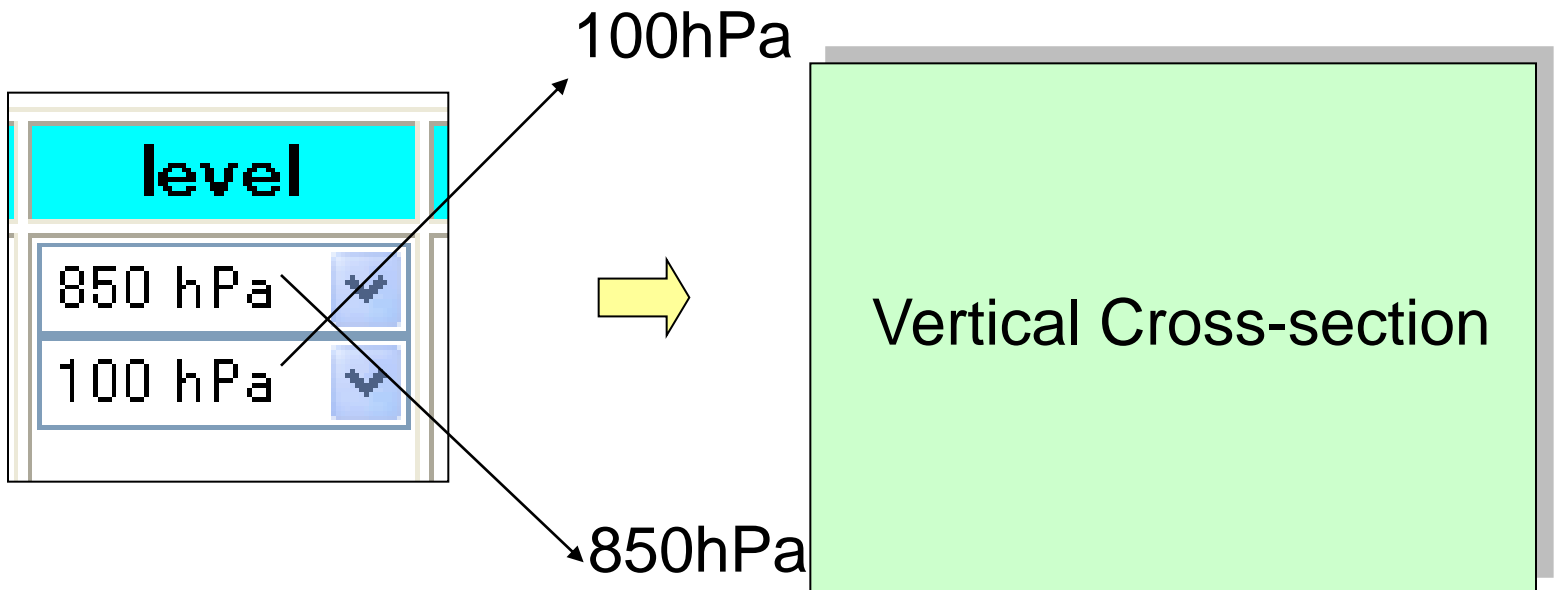
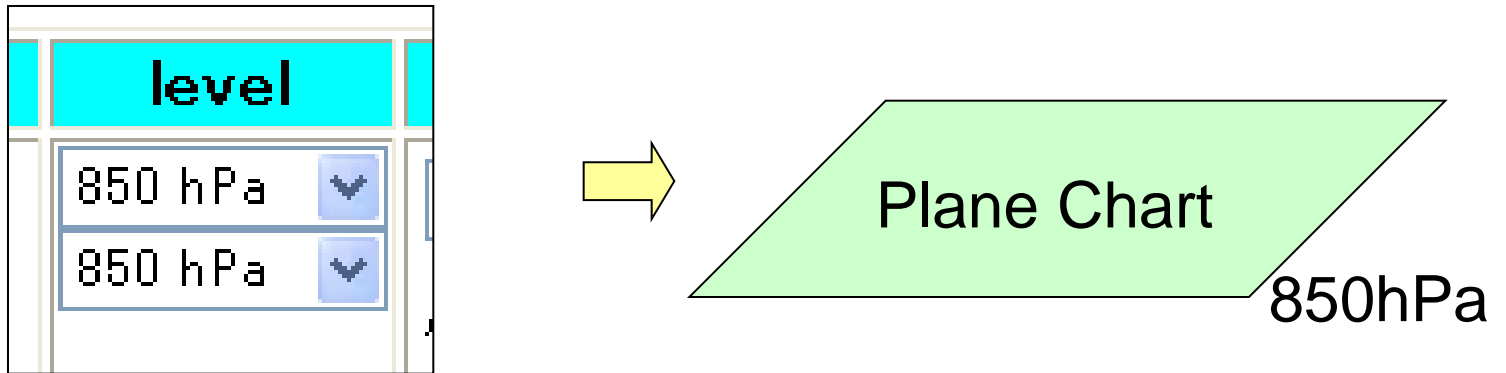
(5) Level

Select vertical level.

To show vertical cross section chart, input bottom level in upper row and top level in lower row.

Level

In “Level” form we set vertical level.



NOTE

Lower row corresponds to top vertical level.
Upper row corresponds to bottom vertical level.

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analysis method : -Analysis_method-

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Graphic Option

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Image Format : png

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Polar Stereographic : North pole

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Reverse the Axes

Flip the X-axis

Flip the Y-axis

No Scale Labels

Draw Credit Inside

No Caption

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(7) Show Period

- RANGE (used usually)
- YEARS
- (select several years to take the average)
- INDEX
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(6) Average period

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Average Period & Show Period

They are most complex in ITACS operation!

average period	show period
MONTHLY	RANGE
Ave <input type="checkbox"/>	2007 12
	2007 12

→ Dec.2007

average period	show period
MONTHLY	RANGE
Ave <input type="checkbox"/>	1979 01
	2007 01

→ Jan.1979, Feb.1979, Mar.1979, Apr.1979, ...
..., Nov.2006, Dec.2006, Jan.2007
(too many values!)

average period	show period
Year average	RANGE
Ave <input type="checkbox"/>	1979 - 2007
	01 - 01

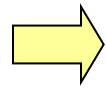
→ Jan.1979, Jan.1980, Jan.1981, ... ,Jan.2007
(year-to-year values)

NOTE

In Show Period form upper low means start date and lower raw means end date.
In Average Period form "MONTHLY" means "each month" but "Year average"
means "year-to-year".

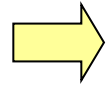
Average Period & Show Period

average period	show period
MONTHLY	RANGE
Ave <input checked="" type="checkbox"/>	2009 06
	2009 08



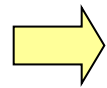
three month (Jun.2009, Jul.2009 and Aug.2009)
averaged value

average period	show period
MONTHLY	RANGE
Ave <input checked="" type="checkbox"/>	1979 06
	2009 08



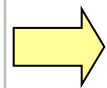
363 month (Jun.1979, Jul.1979, Aug.1979, Sep.1979,
Oct.1979,..., May.2009, Jun.2009, Jul.2009, Aug.2009)
averaged value!

average period	show period
Year average	RANGE
Ave <input checked="" type="checkbox"/>	1979 - 2009
	06 - 08



climatological average for three month (June, July,
and August, JJA) from 1979 to 2009

average period	show period
Year average	RANGE
Ave <input type="checkbox"/>	1979 - 2009
	06 - 08



Year-to-year three month averaged value (1979JJA,
1980JJA, 1981JJA,..., 2009JJA)

NOTE

“Ave” means temporally averaged values.

Average Period & Show Period

The screenshot shows two main sections: 'average period' and 'show period'. In the 'average period' section, 'Year average' is selected in a dropdown menu, and the 'Ave' checkbox is checked. In the 'show period' section, 'YEARS' is selected in a dropdown menu. Below this, a table contains the years 1998, 2000, 2001, and 2005. At the bottom of the 'show period' section, there are two dropdown menus showing '08' separated by a minus sign. A yellow arrow points from the 'YEARS' dropdown to the text on the right.

1998	2000	2001	2005	

Type from your keyboard

Averaged values over Aug.1998, Aug.2000, Aug.2001 and Aug.2005
 $(\text{Aug.1998} + \text{Aug.2000} + \text{Aug.2001} + \text{Aug.2005}) / 4$

NOTE

You can select some years that you want to treat by "YEARS" in Show Period form.

data1

dataset	element	data type	area	level		average period	show period
-Dataset- ▾	-Element- ▾ Vector <input type="checkbox"/> SD <input type="checkbox"/>	-Data_type- ▾	-Area- ▾	1000hPa ▾	1000hPa ▾	-Mean Period- ▾ Ave <input type="checkbox"/>	RANGE ▾ 1900 ▾ 1900 ▾

analysis method : REGRESSION_COEFFICIENT ▾

(9) significance

To set confidence level based on t-test

data2

dataset	element	data type	area	level		average period	lag	significance
-Dataset- ▾	-Element- ▾ SD <input type="checkbox"/>	-Data_type- ▾	-Area- ▾ Lat: -90 - 90 Ave <input type="checkbox"/> Lon: 0 - 360 Ave <input type="checkbox"/>	1000hPa ▾	1000hPa ▾	-Mean Period- ▾ Ave <input type="checkbox"/>	0 ▾ YEAR ▾	90%(two side) ▾

(8) Analysis Method

-Analysis _method-: To show a chart associated with data1

DATA1_DATA2: To overlay data2 with data1(to show data1 and data2 on the same chart)

SUBTRACT: To show data1 minus data2

COMPOSITE: To make composite chart of data1 under the condition set on data2

SIGNIFICANCE_TEST: To show areas where the difference between the composite patterns of data1 and data2 is statistically significant.

REGRESSION_COEFFICIENT: To show regression coefficient (data1 is dependent variable, data2 is explanatory variable.)

CORRELATION_COEFFICIENT: To show correlation coefficient (data1 is dependent variable, data2 is explanatory variable.)

EOF: To show a result of Empirical Orthogonal Function (EOF) analysis. The data matrix is composed in data1.

EOF_MULTI: Same as EOF but the data matrix is composed in data1 and data2.

SVD: To show a result of Singular Value Decomposition (SVD) analysis

FFT: To show Fourier power spectrum of time series data composed in data1

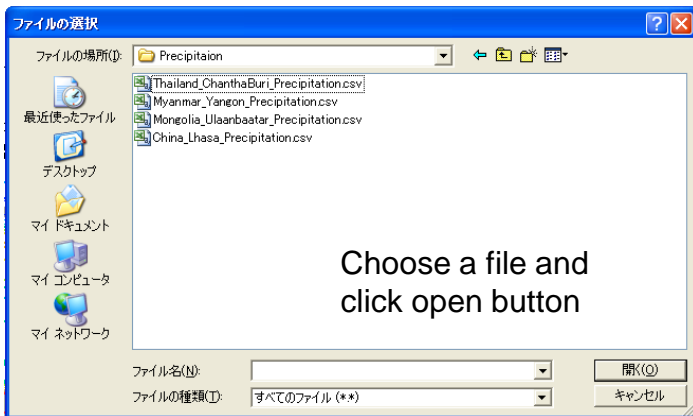
WAVELET: To show a result of wavelet analysis

USER_INPUT

data1

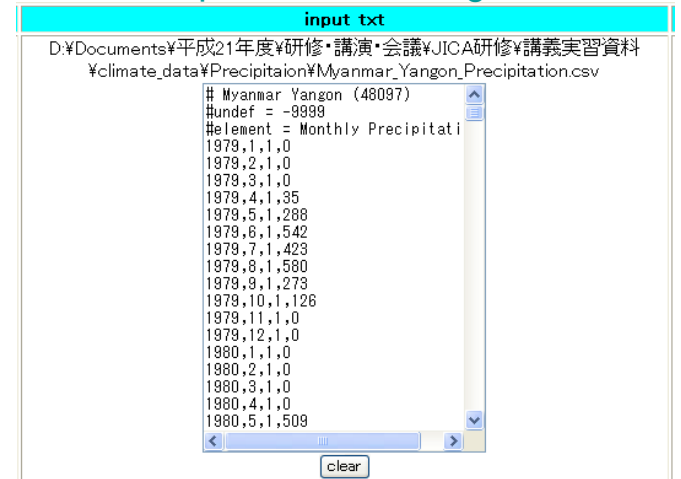
dataset	element	input txt
USER INPUT	UPLOAD TXT Vector <input type="checkbox"/> SD <input type="checkbox"/>	参照... upload

1 Click the button and choose an appropriate file



2 Then click the upload button so that the chosen file is uploaded.

3 And "input txt" will change as below



NOTE

You can use a data file save as text file on your PC.