

CLIK hands-on (part IV):

Multi Model Downscaling

using CLIK

(<http://clik.apcc21.org>)

Daeun Jeong
29 August 2019

Downscaling procedure in CLIK: temperature over Busan for ASO 2019

Station data

- Point (uploaded)

1958								2018
------	--	--	--	--	--	--	--	------

Global observation data

- Grid (built-in)
- Reanalysis, CAMS OPI, and OISST

1979								2018
------	--	--	--	--	--	--	--	------

1982								2018
------	--	--	--	--	--	--	--	------

Model data

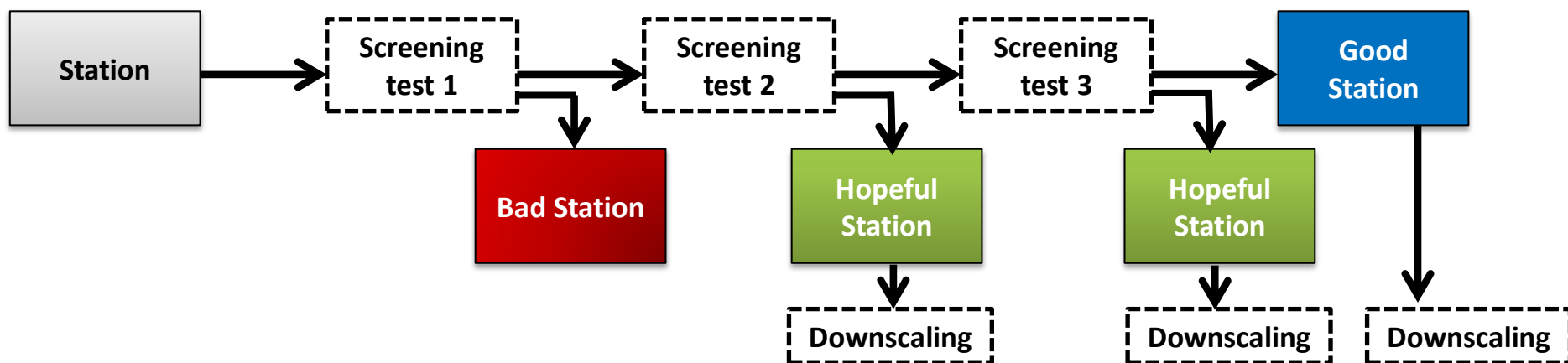
- Grid (built-in)
- Hindcast of dynamical models

1983							2014
------	--	--	--	--	--	--	------

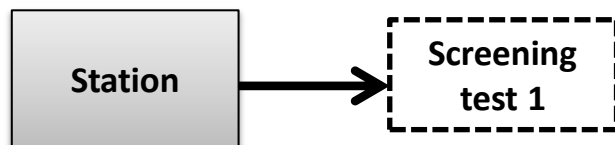
1983						2011	
------	--	--	--	--	--	------	--

1982						2006	
------	--	--	--	--	--	------	--

Downscaling procedure in CLIK: temperature over Busan for ASO 2019



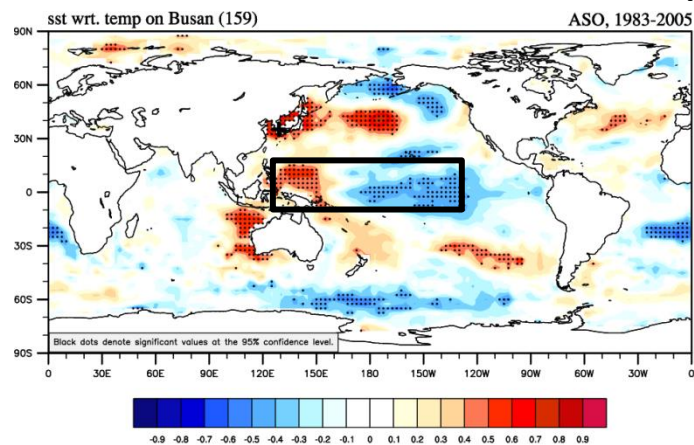
Downscaling procedure in CLIK: temperature over Busan for ASO 2019



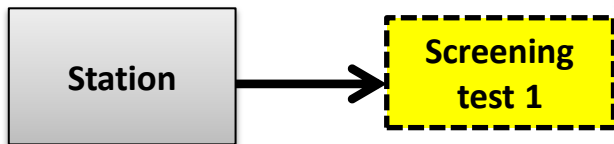
Downscaling procedure in CLIK: temperature over Busan for ASO 2019

Correlation between reanalysis and station data

SST Temp on Busan

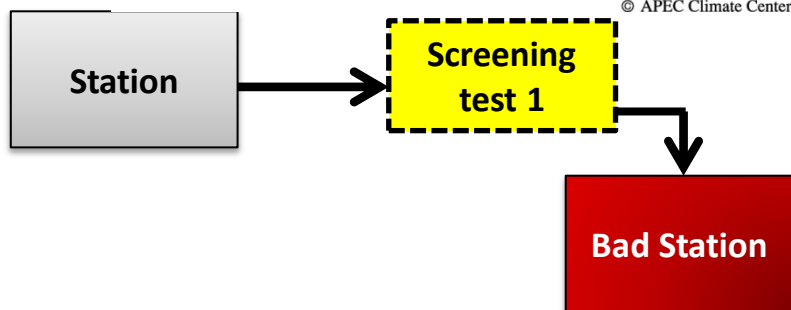
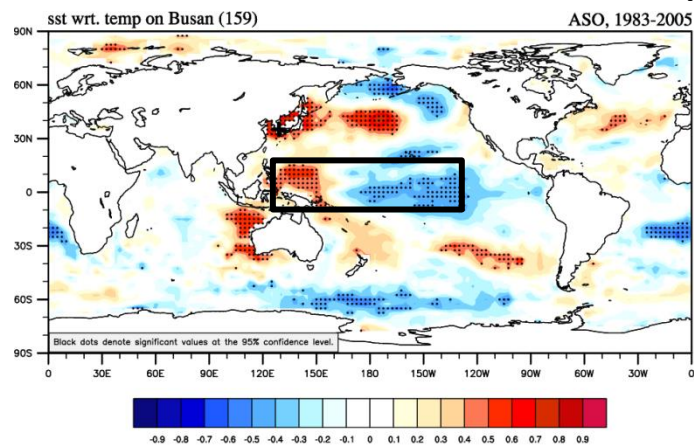


© APEC Climate Center



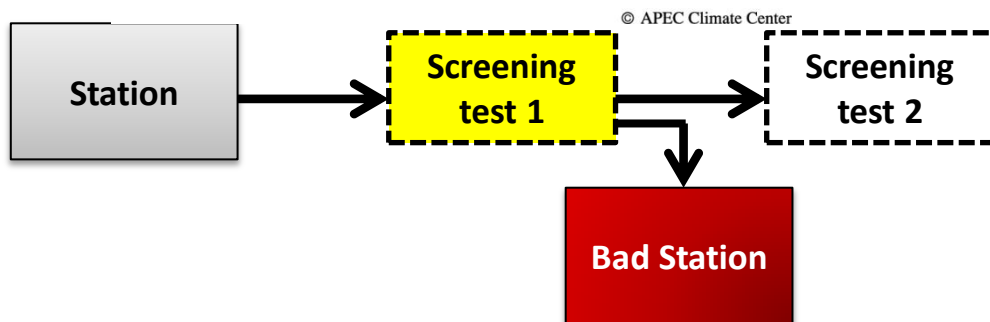
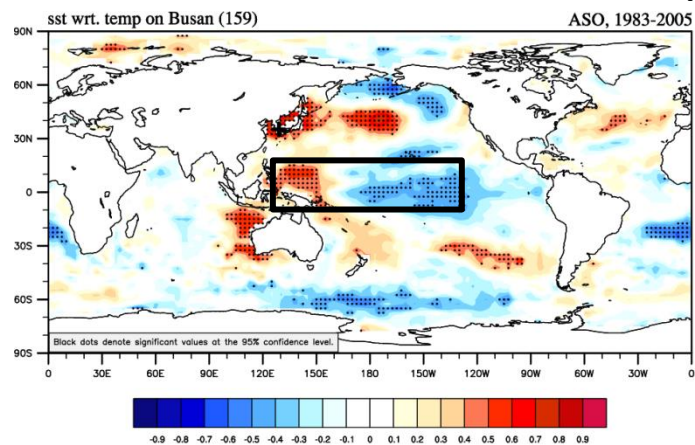
Downscaling procedure in CLIK: temperature over Busan for ASO 2019

Correlation between reanalysis and station data
SST Temp on Busan



Downscaling procedure in CLIK: temperature over Busan for ASO 2019

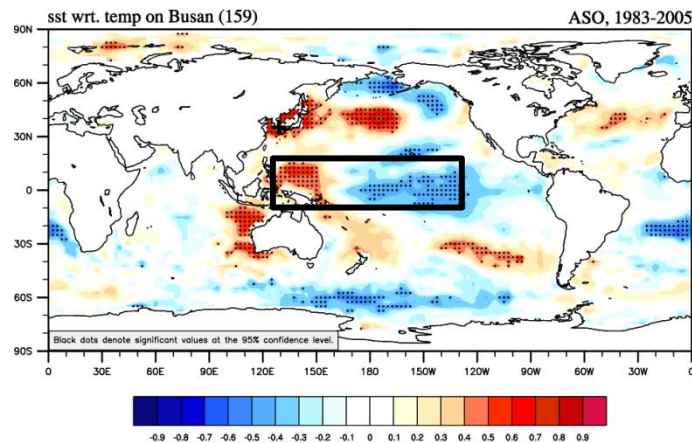
Correlation between reanalysis and station data
SST Temp on Busan



Downscaling procedure in CLIK: temperature over Busan for ASO 2019

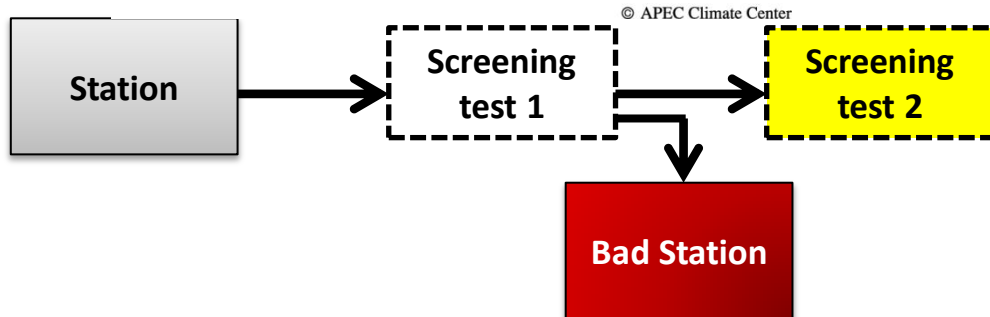
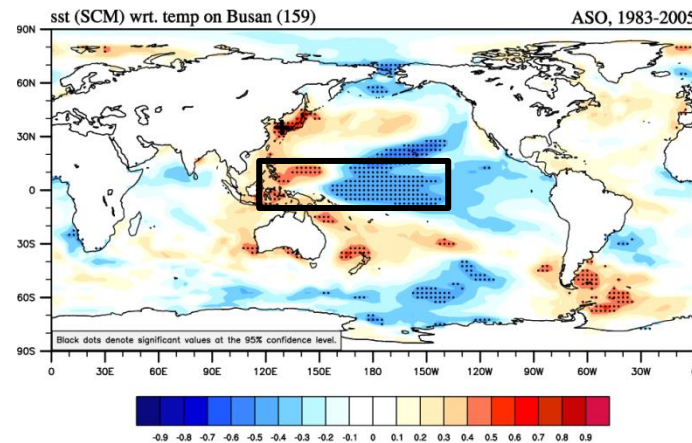
Correlation between reanalysis and station data

SST Temp on Busan



Correlation between model and station data

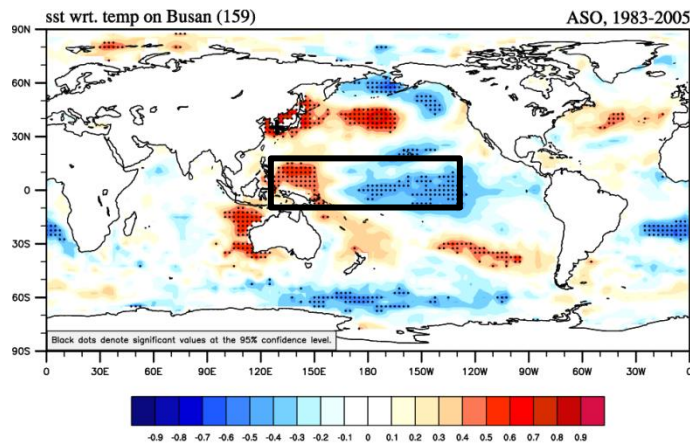
SST Temp on Busan



Downscaling procedure in CLIK: temperature over Busan for ASO 2019

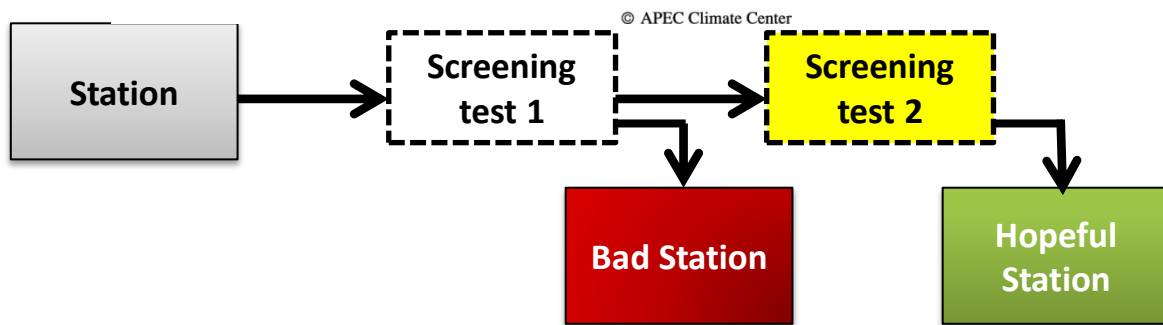
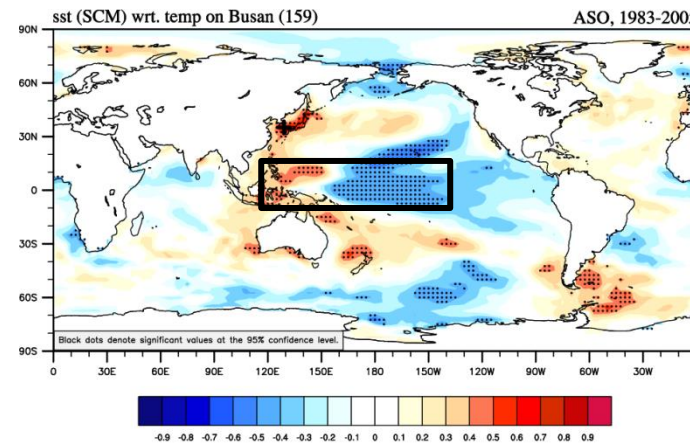
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SST Temp on Busan



Correlation between model and station data

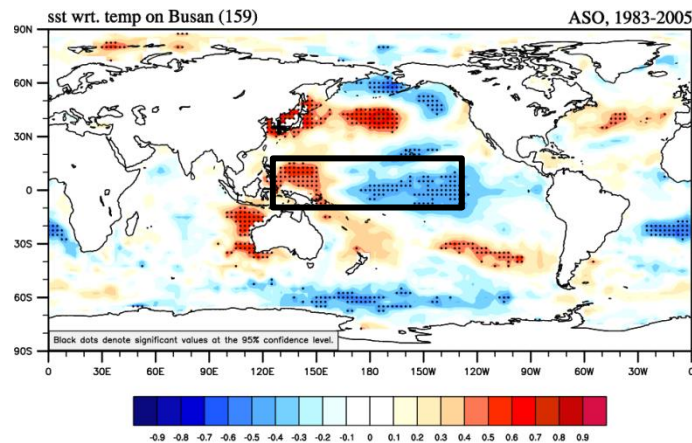
SST Temp on Busan



Downscaling procedure in CLIK: temperature over Busan for ASO 2019

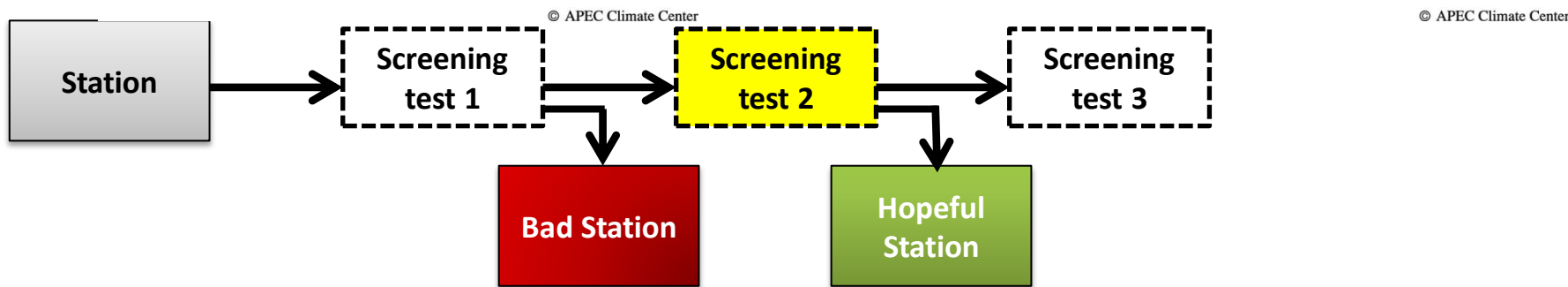
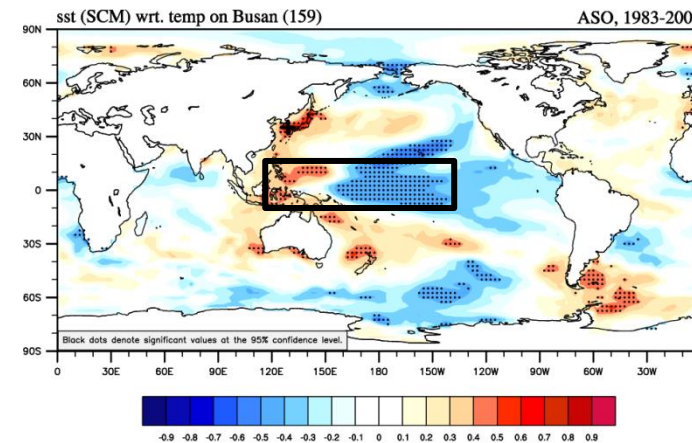
Correlation between reanalysis and station data

SST Temp on Busan



Correlation between model and station data

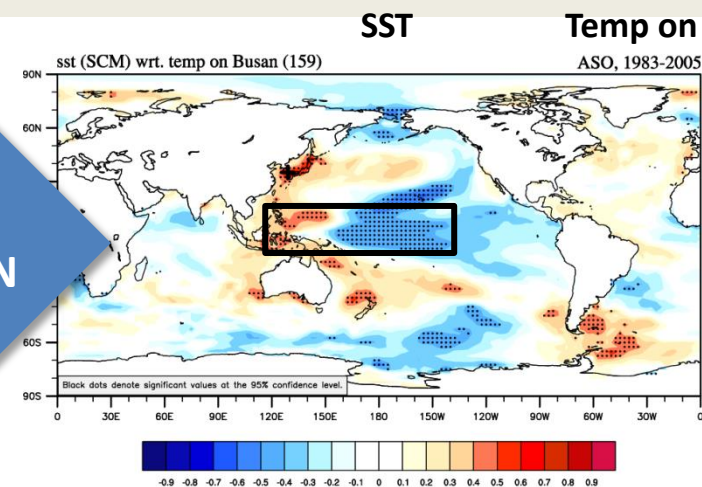
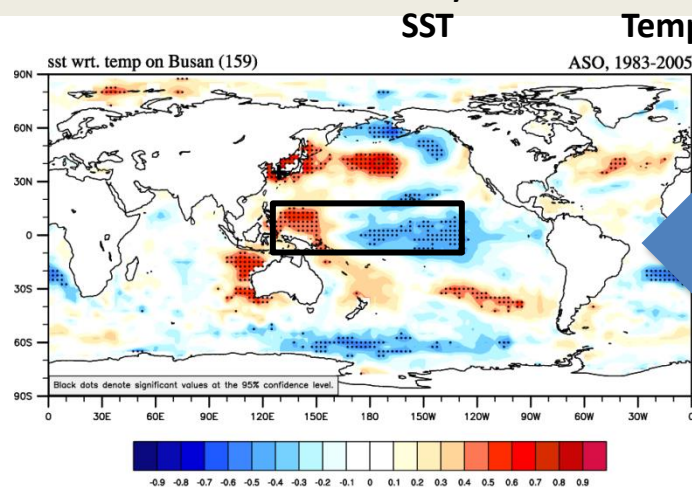
SST Temp on Busan



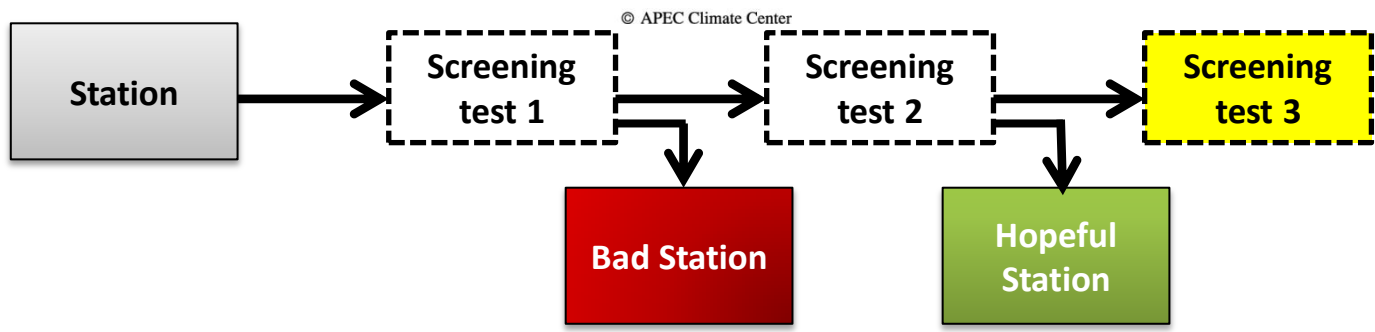
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Correlation between model and station data



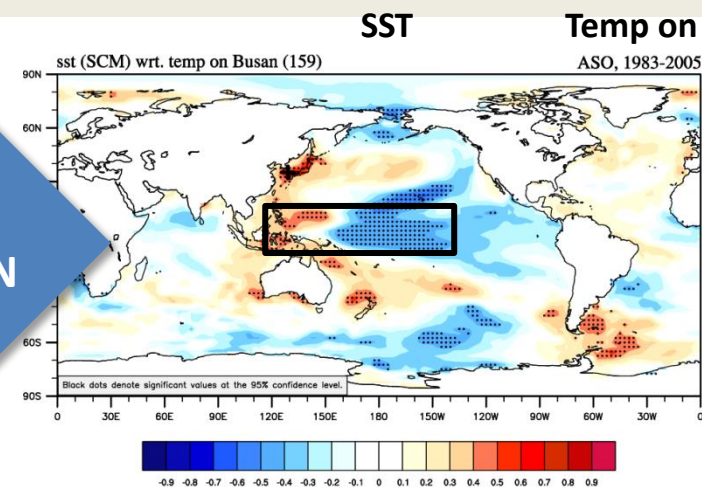
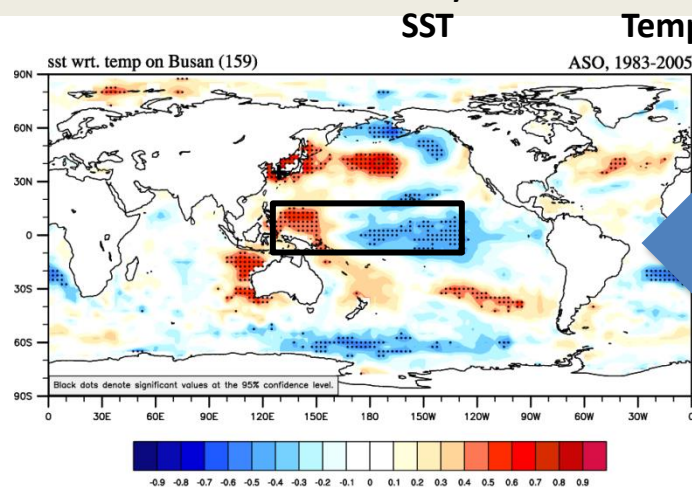
PATTERN CORRELATION



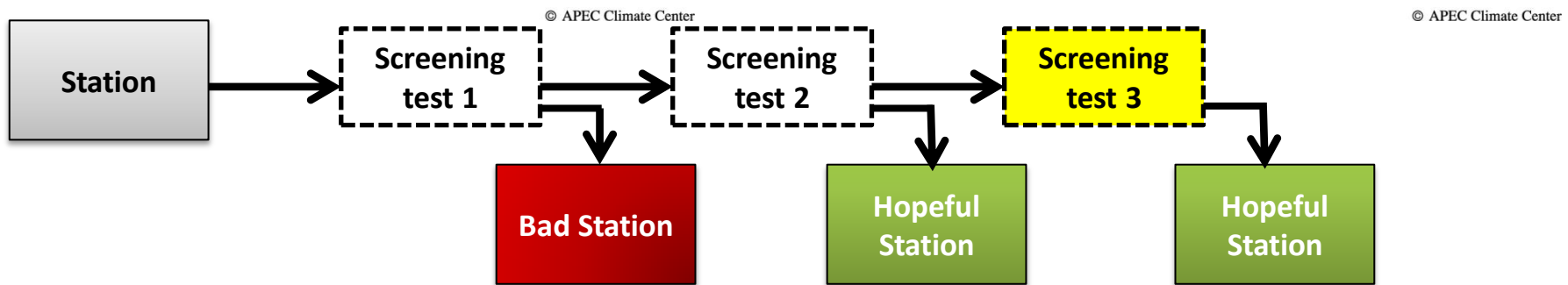
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Correlation between reanalysis and station data

Correlation between model and station data



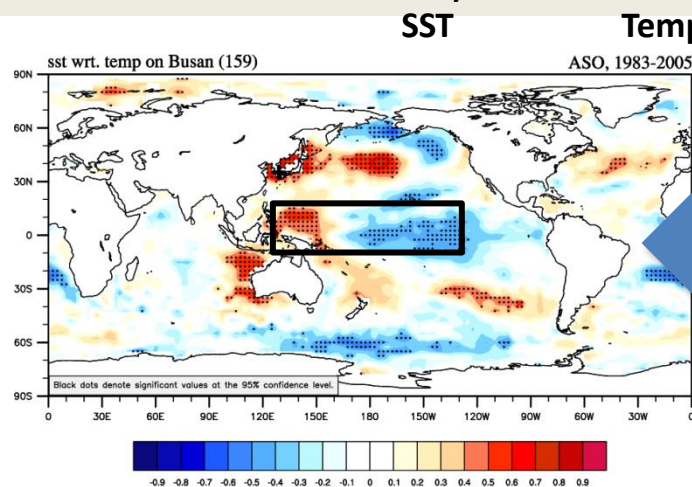
PATTERN CORRELATION



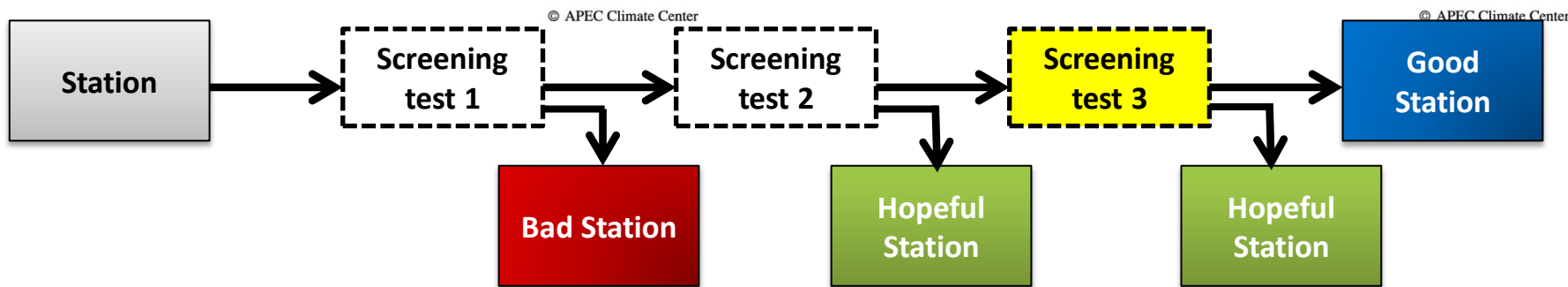
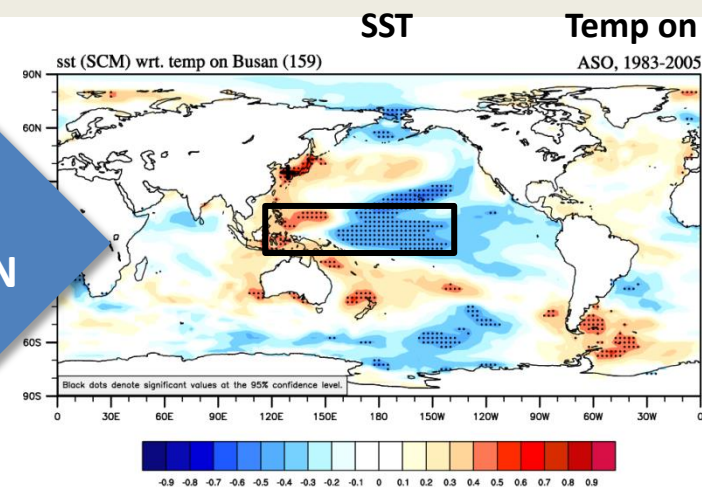
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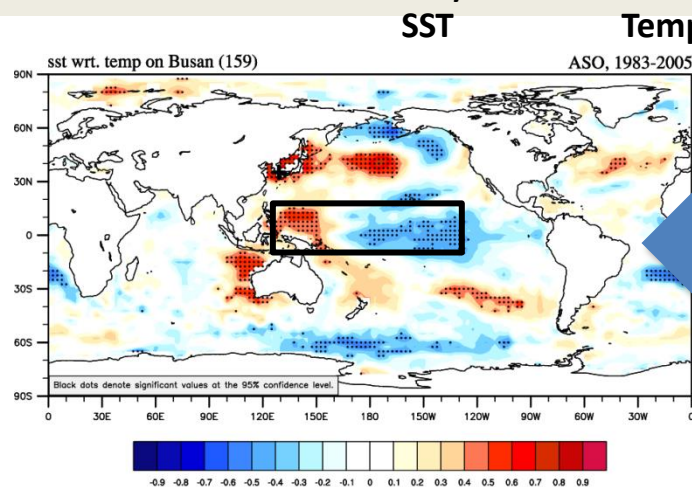
PATTERN CORRELATION



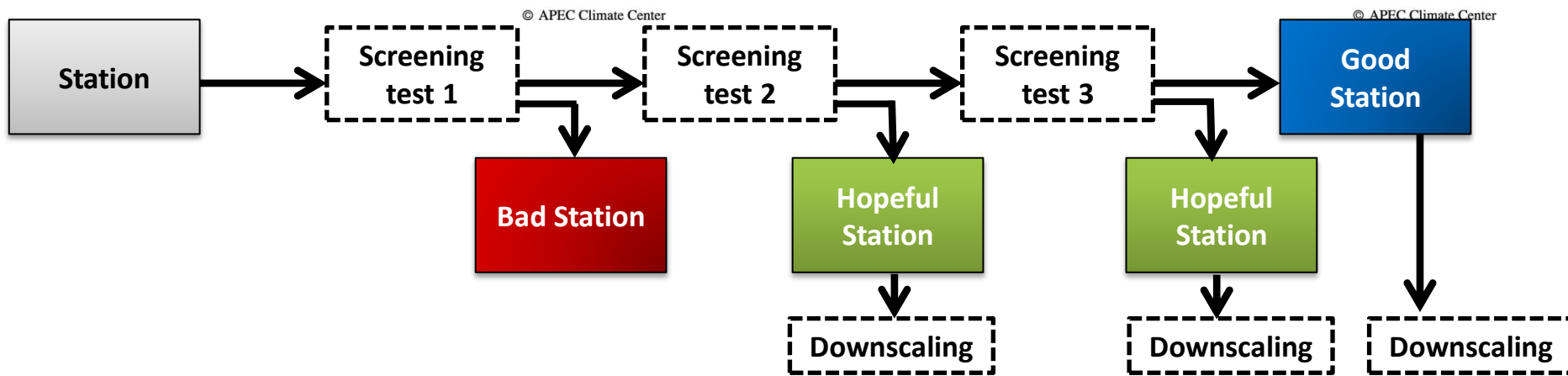
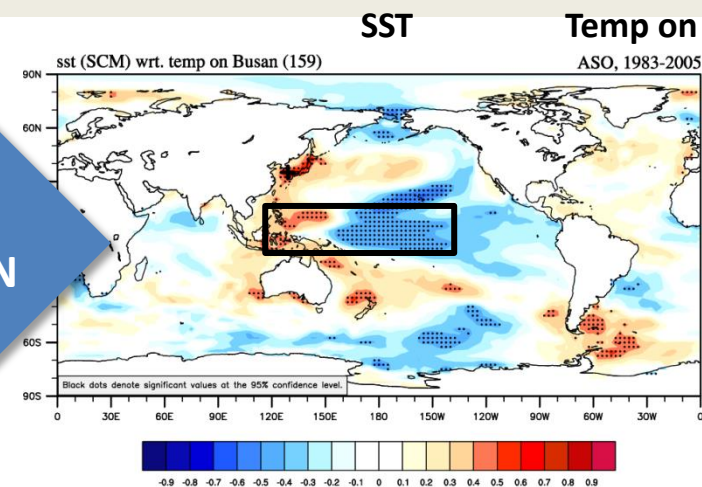
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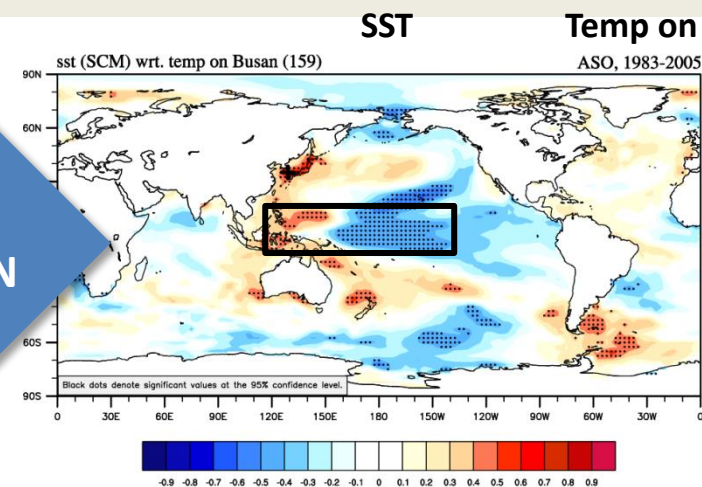
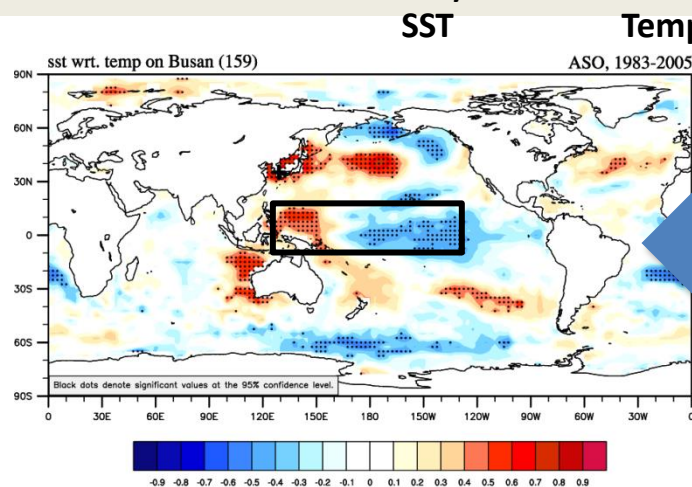
PATTERN CORRELATION



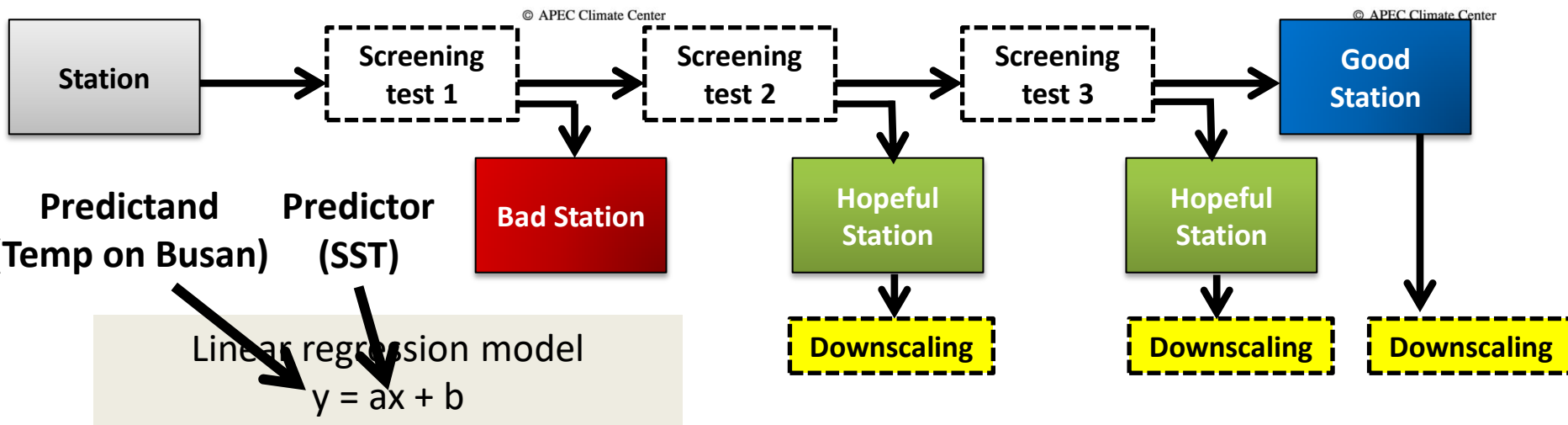
Downscaling procedure in CLIK: temperature over Busan for ASO 2019

Correlation between reanalysis and station data

Correlation between model and station data



PATTERN CORRELATION



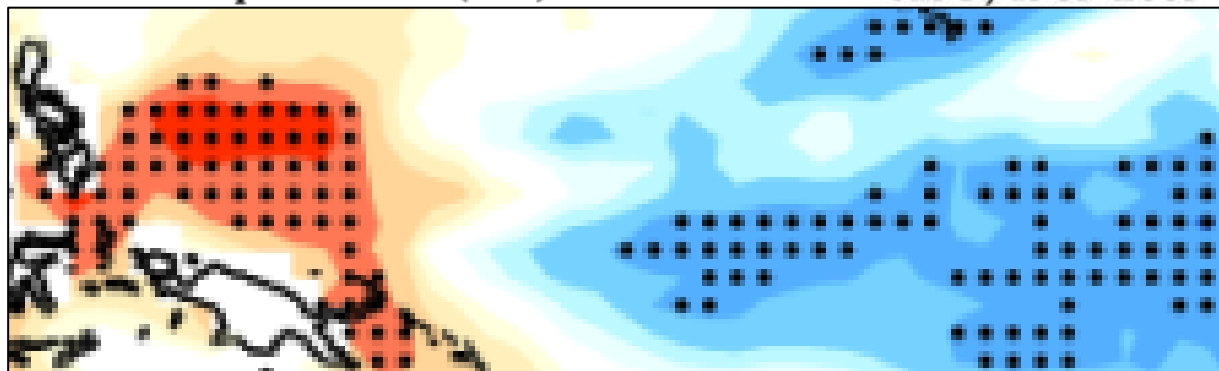
Downscaling procedure in CLIK: temperature over Busan for ASO 2019

Relationship between

SST over the tropical Pacific & temperature over Busan

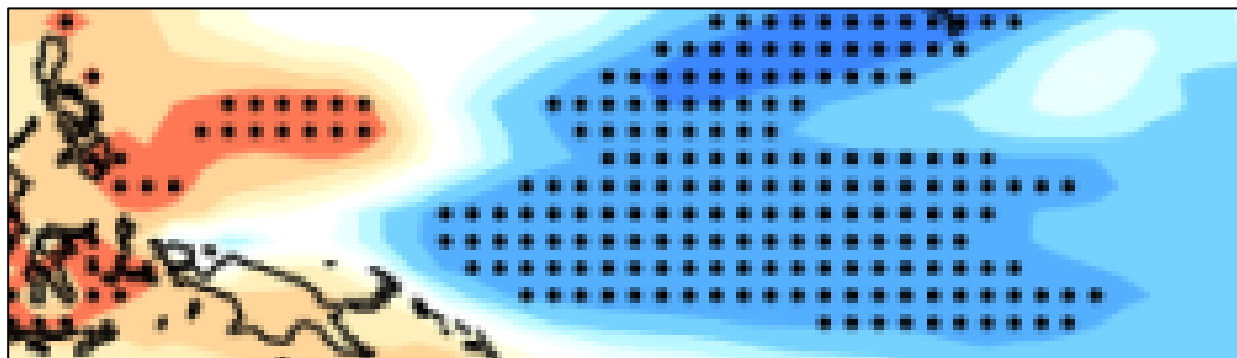
sst wrt. temp on Busan (159)

ASO, 1983-2005



sst (SCM) wrt. temp on Busan (159)

ASO, 1983-2005



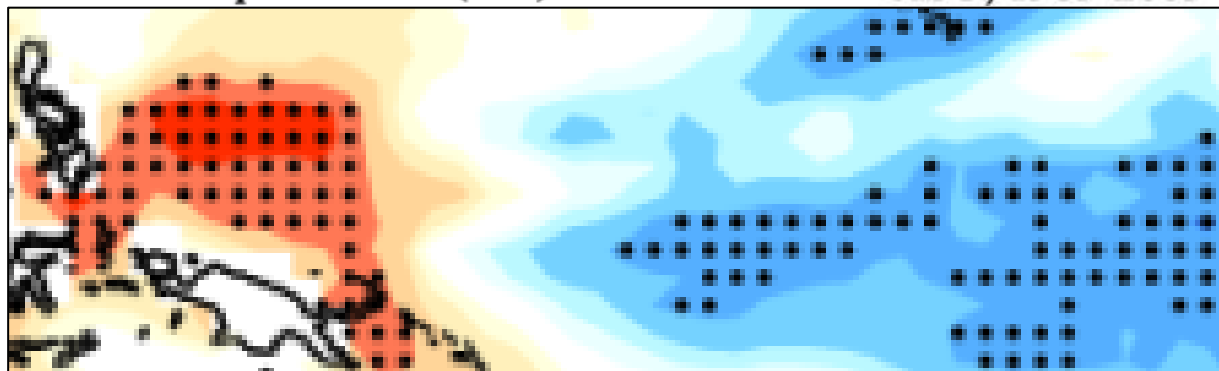
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ASO, 1983-2005

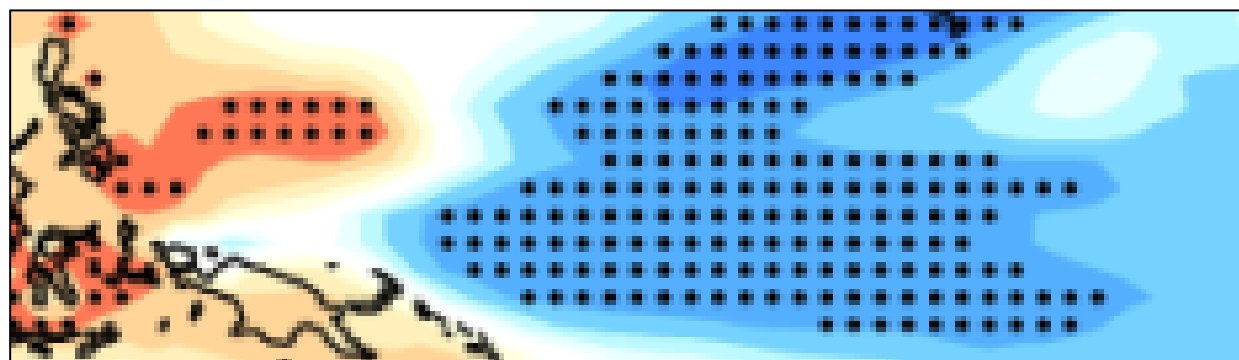


from global observational data

- The station data has relationship with the global observational SST over the northwestern North Pacific.

sst (SCM) wrt. temp on Busan (159)

ASO, 1983-2005



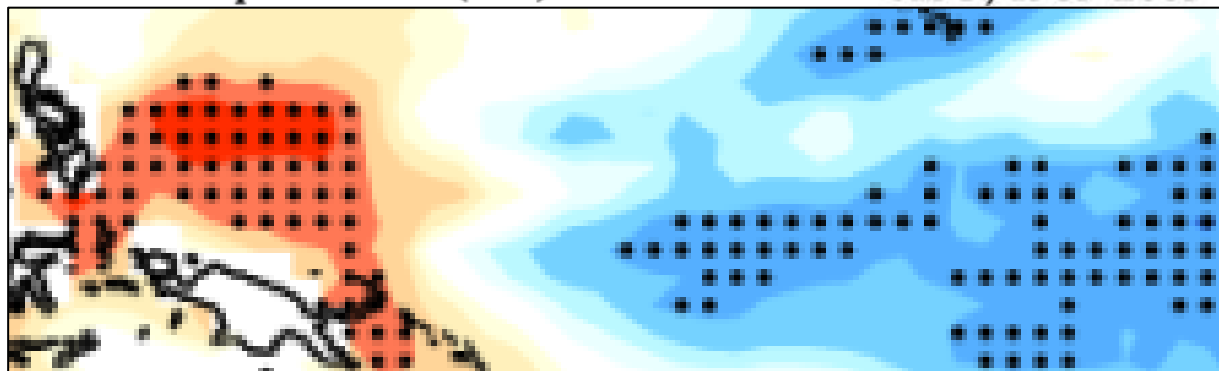
Downscaling procedure in CLIK: temperature over Busan for ASO 2019

Relationship between

SST over the tropical Pacific & temperature over Busan

sst wrt. temp on Busan (159)

ASO, 1983-2005



from global observational data

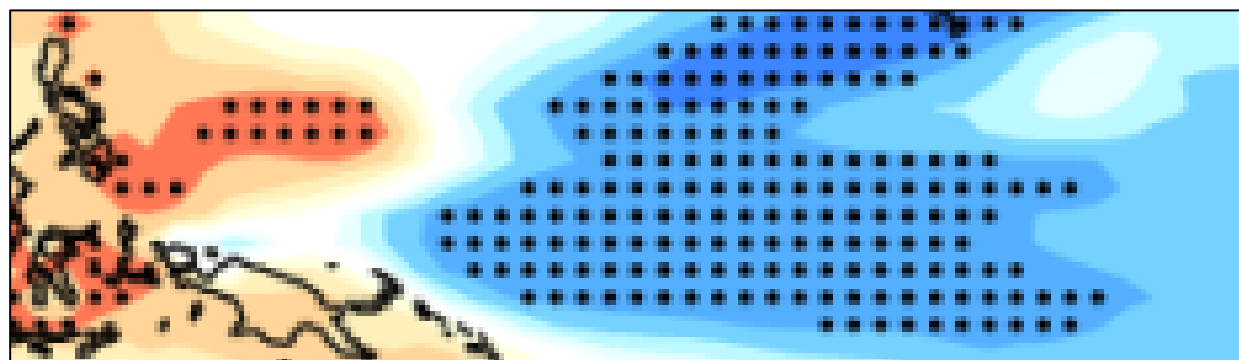
- The station data has relationship with the global observational SST over the northwestern North Pacific.

from model data

- Dynamical models can reproduce the relationship between observation and station data.

sst (SCM) wrt. temp on Busan (159)

ASO, 1983-2005



Temperature over Busan for ASO 2019?

Produce a downscaled forecast : temperature over Busan for ASO 2019

The screenshot shows the Clik Climate Information Toolkit interface. At the top, there are navigation tabs for 'MME', 'Downscale', and 'My Page', along with 'Logout' and 'Edit' options. The main section is titled 'Select Dataset / Station' and contains a table of datasets. A red circle with the number '1' and a hand cursor points to the 'Korea 60 Stations' dataset row.

Dataset Name	Countries	Total Stations	Period(prec)	Period(temp)	Public
MCDW(Monthly Climatic Data for th...	The World	6463	1998 ~ 2014	1998 ~ 2014	PUBLIC
Tmax in Chile	Chile	24	N/A	1970 ~ 2019	downy
BUSAN	Korea, Republic of	1	1960 ~ 2017	1960 ~ 2017	downy
Tmin in Chile	Chile	24	N/A	1970 ~ 2019	downy
Korea 60 Stations	Korea, Republic of	60	1973 ~ 2008	1973 ~ 2006	PUBLIC

Below the table are 'Create', 'Edit', and 'Remove' buttons. A map of South Korea is shown below the table, with a red circle '2' and a hand cursor pointing to a blue box highlighting the Busan region. A callout box over the map shows coordinates: 'Lat: 34.639528 to 35.77', 'Lon: 127.748412 to 130', and 'Area: 15828.03 sq.mi.'. A legend box shows 'Shift + drag' with a hand cursor. Below the map are 'Add' and 'Remove' buttons. A red circle '3' and a hand cursor point to the 'Add' button.

Below the map is a table titled 'Stations (11)'. A red checkmark is next to the first row. A red circle '4' and a hand cursor point to the 'Temperature' column header.

Station ID	Name	Precipitation	Temperature
152	Ulsan	1973/1 ~ 2008/5	1973/1 ~ 2006/12
159	Busan	1973/1 ~ 2008/5	1973/1 ~ 2006/12
162	Tongyeong	1973/1 ~ 2008/5	1973/1 ~ 2006/12
168	Yeosu	1973/1 ~ 2008/5	1973/1 ~ 2006/12
192	Jinju	1973/1 ~ 2008/5	1973/1 ~ 2006/12

Produce a downscaled forecast : temperature over Busan for ASO 2019

A. Set options

Job description
 BUSAN / 2019ASO / TEMP / SST

Predictand
 Season: 2019, ASO
 Variable: Precipitation, Temperature

Predictor
 Variable: PREC, T850, Z500, SLP, U850, V850, U200, V200, SST
 Models: APCC, MSC, NASA, NCEP, PNU, POAMA
 Training Period: Form 1983, To 2006, 24 Years
 Method: Linear Regression
 Advanced Options: Significance Level 10%, Minimum Pattern Score 0.3

Domain
 Latitude: -10 ~ 20, Longitude: 125 ~ 230
 Map showing a domain box over the Korean peninsula with coordinates: Lat: -10.000000 to 20.000000, Lon: 125.000000 to 230.000000, Area: 15307647.61 sq.mi.

Navigation: < Previous, Downscale >

Job description
BUSAN / 2019ASO /
TEMP / SST
 (up to you)

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP / SST

Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- SLP
- U200
- T850
- U850
- V200
- Z500
- V850
- SST

Models

- APCC
- NCEP
- MSC
- PNU
- NASA
- POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

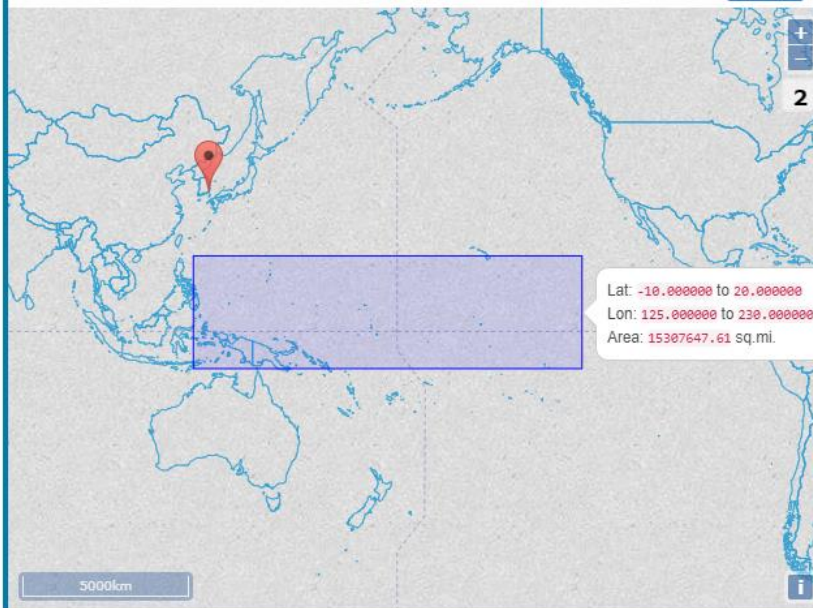
Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude : -10 ~ 20

Longitude : 125 ~ 230

Apply



< Previous

Downscale >

A. Set options

Predictand: season
2018 ASO

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP / SST

Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- SLP
- U200
- T850
- U850
- V200
- Z500
- V850
- SST

Models

- APCC
- NCEP
- MSC
- PNU
- NASA
- POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

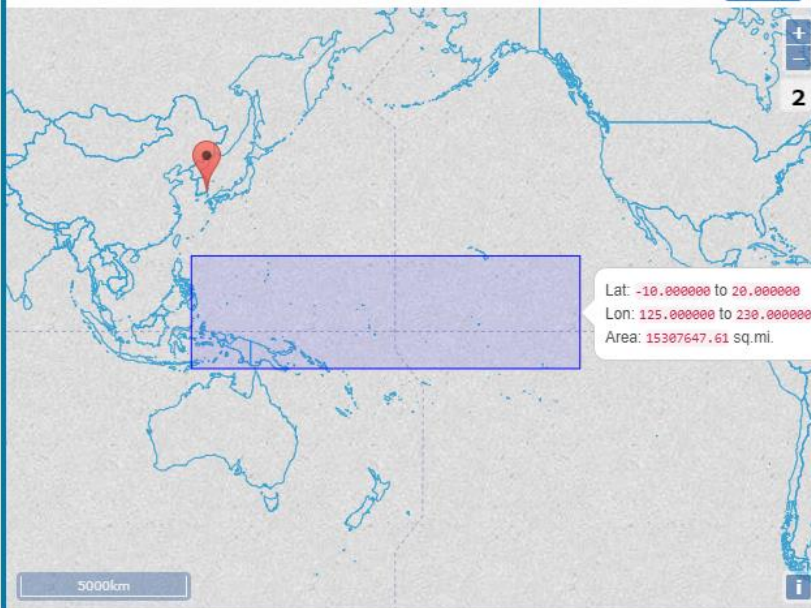
Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude : -10 ~ 20

Longitude : 125 ~ 230

Apply



< Previous

Downscale >

A. Set options

Predictand: variable

Temperature

Produce a downscaled forecast : temperature over Busan for ASO 2019

Job description
BUSAN / 2019ASO / TEMP / SST
Year: 2019 Season: ASO Variable: Precipitation Temperature

Predictor
Variable
 PREC T850 Z500
 SLP U850 V850
 U200 V200 SST

Models
 APCC MSC NASA
 NCEP PNU POAMA

Training Period
Form: 1983 To: 2006 24 Years

Method
 Linear Regression

Advanced Options
Significance Level: 10 %
Minimum Pattern Score: 0.3

Domain
Latitude: -10 ~ 20 Longitude: 125 ~ 230
Apply

Map showing the domain around Busan, South Korea. A red pin is located at Busan. A blue box highlights the domain area. A tooltip shows: Lat: -10.000000 to 20.000000, Lon: 125.000000 to 230.000000, Area: 15307647.61 sq.mi.

5000km

Previous Downscale

A. Set options

Predictor: variable

SST

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP / SST

Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- T850
- Z500
- SLP
- U850
- V850
- U200
- V200
- SST

Models

- APCC
- MSC
- NASA
- NCEP
- PNU
- POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

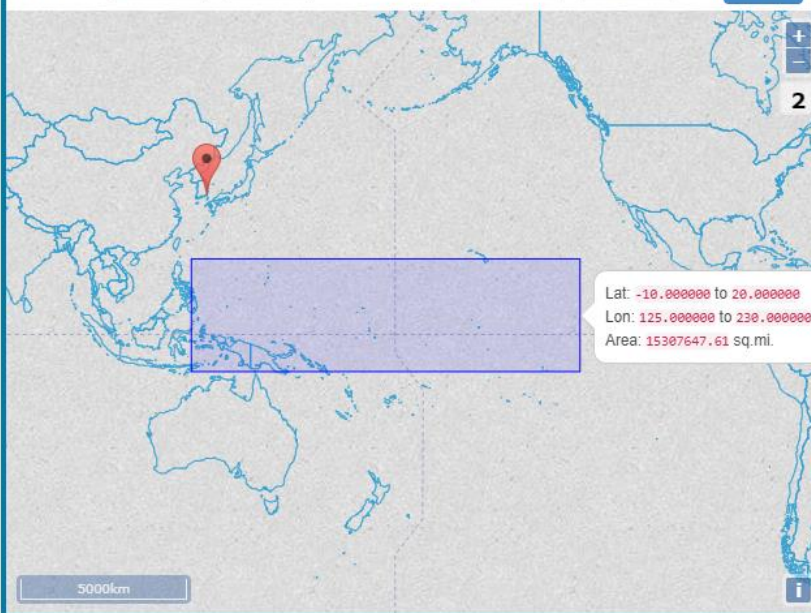
Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude : -10 ~ 20

Longitude : 125 ~ 230

Apply



< Previous

Downscale >

A. Set options

Predictor: Models

APCC MSC

NASA NCEP

PNU POAMA

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP / SST

Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- SLP
- U200
- T850
- U850
- V200
- Z500
- V850
- SST

Models

- APCC
- NCEP
- MSC
- PNU
- NASA
- POAMA

Training Period

Form 1983 To 2006 **24 Years**

Method

Linear Regression

Advanced Options

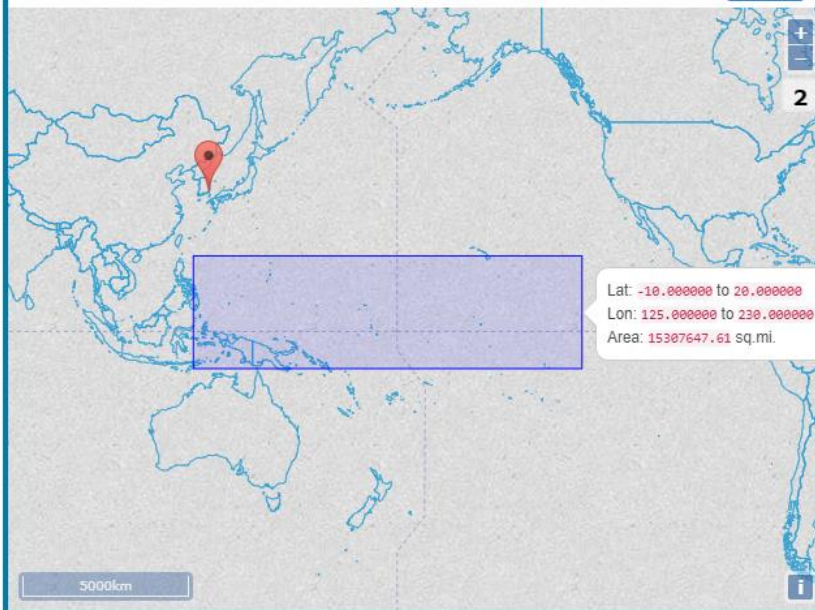
Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude : -10 ~ 20

Longitude : 125 ~ 230

Apply



< Previous

Downscale >

A. Set options

Predictor: Training Period
Common period
of selected
models

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP / SST

Predictand

Season: Year 2019, Season ASO
Variable: Precipitation, Temperature

Predictor

Variable

PREC T850 Z500
 SLP U850 V850
 U200 V200 SST

Models

APCC MSC NASA
 NCEP PNU POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude: -10 ~ 20 Longitude: 125 ~ 230

5000km

< Previous Downscale >

A. Set options

Predictor: Method
Linear Regression

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP / SST

Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- T850
- Z500
- SLP
- U850
- V850
- U200
- V200
- SST

Models

- APCC
- MSC
- NASA
- NCEP
- PNU
- POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

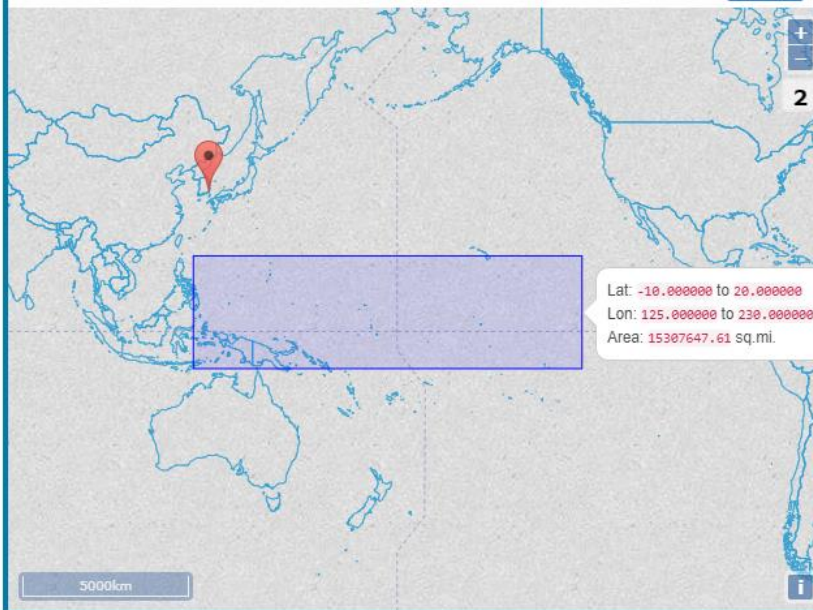
Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude : -10 ~ 20

Longitude : 125 ~ 230

Apply



< Previous

Downscale >

A. Set options

Predictor: Advanced Options
Significance Level: 10%
Minimum Pattern Score: 0.1

Produce a downscaled forecast : temperature over Busan for ASO 2019

CLIK Climate Information Toolkit

MME Downscale

Job description

BUSAN / 2019ASO / TEMP / SST

Predictor

Variable

PREC T850 Z500
 SLP U850 V850
 U200 V200 SST

Models

APCC MSC NASA
 NCEP PNU POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

Significance Level 10 %
Minimum Pattern Score 0.3

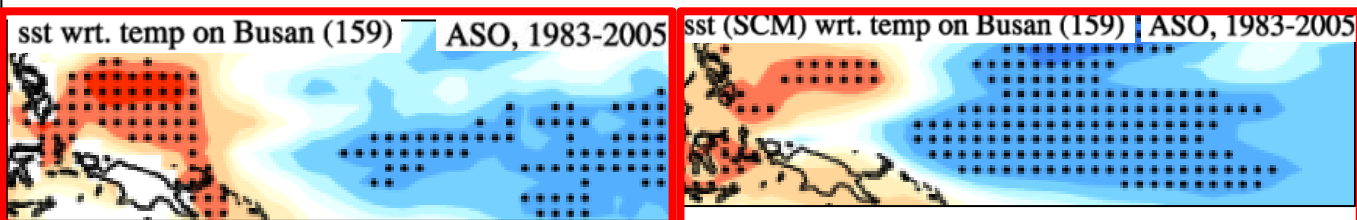
CLIK downscaling

⦿ A way to localize existing coarse climate information

CLIK downscaling is mainly based on station to Large Scale Meteorological Field (LSMF) relationship. ($Y = a * X + b$) By utilizing the simulated LSMF (X, predictor), CLIK estimates seasonal mean precipitation/temperature (Y, predictand) at specific station.

Empirical relationship: LSMP (OBS) ~ local station rainfall

LSMP (MME) → Local station rainfall



from reanalysis

from model

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP /



Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- SLP
- U200
- T850
- U850
- V200
- Z500
- V850
- SST

Models

- APCC
- NCEP
- MSC
- PNU
- NASA
- POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

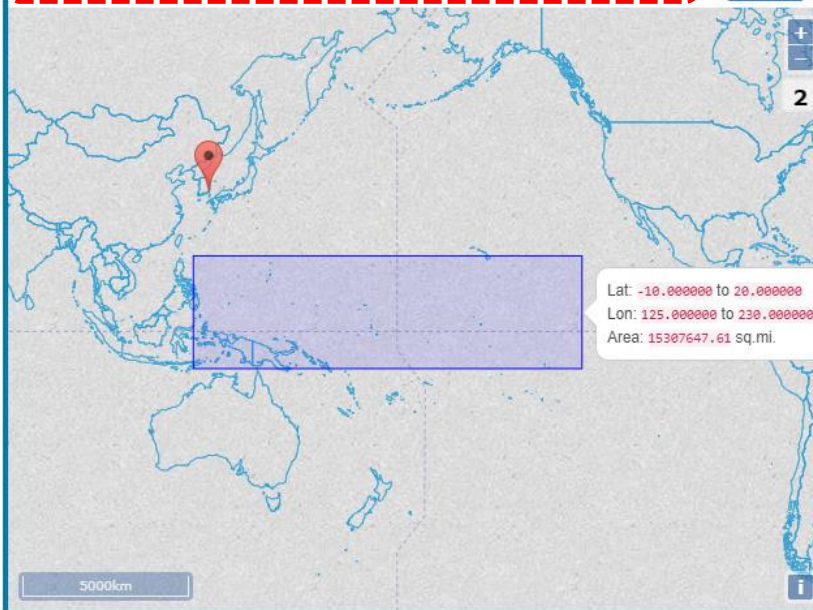
Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude : -10 ~ 20

Longitude : 125 ~ 230

Apply



< Previous Downscale >

A. Set options

Predictor: Domain
The northwestern North Pacific

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP /



Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- SLP
- U200
- T850
- U850
- V200
- Z500
- V850
- SST

Models

- APCC
- NCEP
- MSC
- PNU
- NASA
- POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

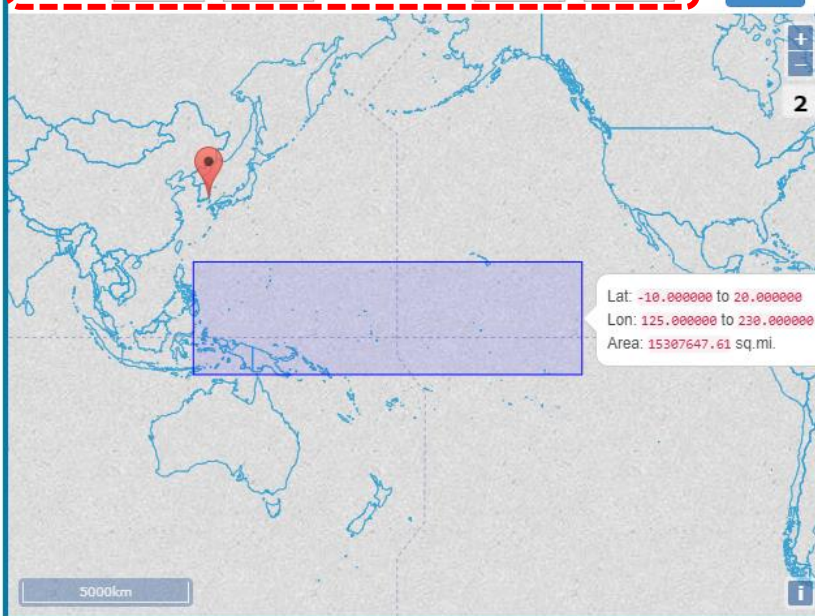
Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude :

Longitude :

HINT for DOMAIN SELECTION!



< Previous Downscale >

A. Set options

Predictor: Domain
The northwestern North Pacific

Produce a downscaled forecast : temperature over Busan for ASO 2019



Correlation - Chrome

주의 요함 | clik.apcc21.org/view/popup/correlation.html?grdvar=sst&stnvar=temp&season=ASO&station=Busan&stnid=159&stnla...

Large scale pattern associated with station 159 on Busan

Season: ASO

Station variable: TEMP

Reanalysis variable: SST

Period: From 1982 to 2006

Method: One point correlation

SST v.r.t. TEMP in Busan

ASO 1982-2006

Black dots denote significant values at the 95% confidence level.

© APEC Climate Center

ptions

omain
North Pacific

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP / SST

Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- SLP
- U200
- T850
- U850
- V200
- Z500
- V850
- SST

Models

- APCC
- NCEP
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Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

Advanced Options

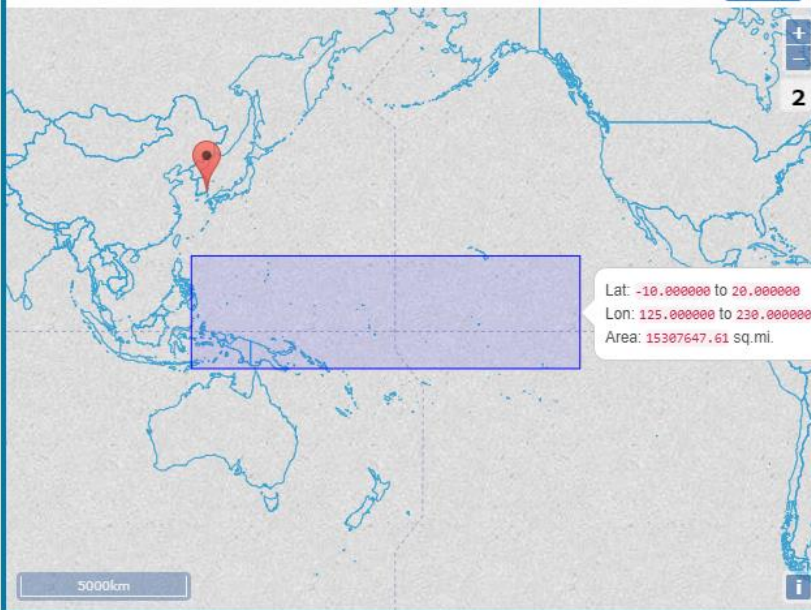
Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude : -10 ~ 20

Longitude : 125 ~ 230

Apply



A. Set options

Predictor: Domain
The northwestern North Pacific

< Previous Downscale



Produce a downscaled forecast : temperature over Busan for ASO 2019

The screenshot shows the Clik Climate Information Toolkit interface. At the top, there are navigation tabs for 'MME', 'Downscale', and 'My Page', along with a 'Logout Edit' link. The main section is titled 'Select Dataset / Station' and contains a table of datasets. A red circle with the number '1' and a hand cursor points to the 'Korea 60 Stations' dataset row. Below the table are 'Create', 'Edit', and 'Remove' buttons. The next section is a map of South Korea with a blue rectangle highlighting the Busan region. A red circle with the number '2' and a hand cursor points to the map. A callout box shows a keyboard 'Shift' key and a mouse 'drag' action with a plus sign. Below the map are 'Add' and 'Remove' buttons. The final section is a table of 'Stations (11)'. A red checkmark and a red circle with the number '3' and a hand cursor point to the first row, which is highlighted. A red circle with the number '4' and a hand cursor points to the 'NEXT' button at the bottom right.

Dataset Name	Countries	Total Stations	Period(prec)	Period(temp)	Public
MCDW(Monthly Climatic Data for th...	The World	6463	1998 ~ 2014	1998 ~ 2014	PUBLIC
Tmax in Chile	Chile	24	N/A	1970 ~ 2019	downy
BUSAN	Korea, Republic of	1	1960 ~ 2017	1960 ~ 2017	downy
Tmin in Chile	Chile	24	N/A	1970 ~ 2019	downy
Korea 60 Stations	Korea, Republic of	60	1973 ~ 2008	1973 ~ 2006	PUBLIC

Station ID	Name	Precipitation	Temperature
152	Ulsan	1973/1 ~ 2008/5	1973/1 ~ 2006/12
159	Busan	1973/1 ~ 2008/5	1973/1 ~ 2006/12
162	Tongyeong	1973/1 ~ 2008/5	1973/1 ~ 2006/12
168	Yeosu	1973/1 ~ 2008/5	1973/1 ~ 2006/12
192	Jinju	1973/1 ~ 2008/5	1973/1 ~ 2006/12

Let's try!

Produce a downscaled forecast : temperature over Busan for ASO 2019



MME

Downscale

My Page

Logout Edit

Job description

BUSAN / 2019ASO / TEMP / SST

Predictand

Season

Year 2019

Season ASO

Variable

Precipitation

Temperature

Predictor

Variable

- PREC
- SLP
- U200
- T850
- U850
- V200
- Z500
- V850
- SST

Models

- APCC
- NCEP
- MSC
- PNU
- NASA
- POAMA

Training Period

Form 1983 To 2006 24 Years

Method

Linear Regression

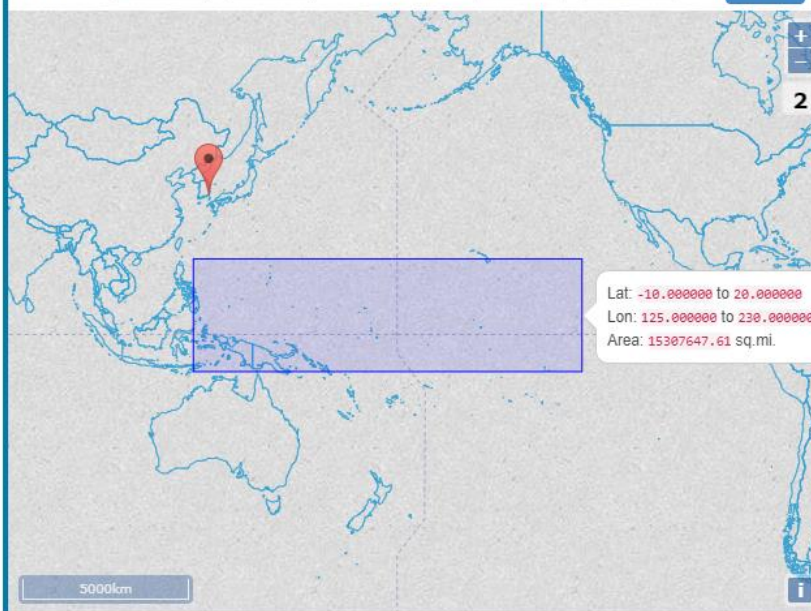
Advanced Options

Significance Level 10 %
Minimum Pattern Score 0.3

Domain

Latitude : -10 ~ 20 Longitude : 125 ~ 230

Apply



< Previous Downscale >



Let's try!

Job description:
BUSAN / 2019ASO / TEM
P / SST

Predictand:
2019 ASO, Temperature

Predictor:
SST
ALL MODELS
lat: -10-20, lon:125-230

Sig. level: 10%

Produce a downscaled forecast : temperature over Busan for ASO 2019

B. Check results

The screenshot shows the 'My Page' section of the Clik Climate Information Toolkit. It features a navigation bar with 'MME', 'Downscale', and 'My Page' tabs. Below the navigation bar, there are sections for 'Jobs' and 'System Status'. The 'Jobs' section displays a table of job results with columns for Job ID, Type, State, Description, Created, Updated, and Result Data. The row for Job ID 9647 is highlighted with a red box and a hand cursor icon, indicating it is the selected result.

JOB ID	TYPE	STATE	DESCRIPTION	CREATED	UPDATED	RESULT DATA
9648	Downscale	fail	BUSAN / 2019ASO / TEMP / SST 5%	2019-08-21 19:23:16	2019-08-21 19:24:42	
9647	Downscale	success	BUSAN / 2019ASO / TEMP / SST	2019-08-21 19:21:09	2019-08-21 19:19:28	download
9646	Downscale	success	BUSAN / 2019ASO / PREC / SST	2019-08-21 19:20:16	2019-08-21 19:20:09	download
9645	Downscale	fail	BUSAN / 2019ASO / TEMP / SST	2019-08-21 19:10:07	2019-08-21 19:10:33	
9644	Downscale	fail	BUSAN / 2019ASO / TEMP / SST	2019-08-21 19:09:27	2019-08-21 19:08:52	
9643	Downscale	success	BUSAN / 2019ASO / PREC / SST	2019-08-21 19:06:22	2019-08-21 19:04:36	download
9642	Downscale	success	BUSAN / 2019ASO / TEMP / SST	2019-08-21 18:59:15	2019-08-21 19:00:13	download
9641	Downscale	fail	BUSAN / 2019ASO / TEMP / SST	2019-08-21 18:58:11	2019-08-21 18:59:36	
9640	Downscale	fail	BUSAN / 2019ASO / PREC / Z500	2019-08-21 18:36:49	2019-08-21 18:38:11	
9639	Downscale	success	BUSAN / 2019ASO / PREC / SLP	2019-08-21 18:33:30	2019-08-21 18:33:13	download

Showing 1 to 10 of 1,693 entries

Navigation: Previous | 1 | 2 | 3 | 4 | 5 | ... | 170 | Next

Produce a downscaled forecast : temperature over Busan for ASO 2019

B. Check results

My Page

Jobs System Status

Last Updated At : 17:21:45 (auto refresh at about every 60 seconds) Auto Refresh

10 records per page

JOB ID	TYPE
9648	Downscale
9647	Downscale
9646	Downscale
9645	Downscale
9644	Downscale
9643	Downscale
9642	Downscale
9641	Downscale
9640	Downscale
9639	Downscale

Showing 1 to 10 of 1,693 entries

Details

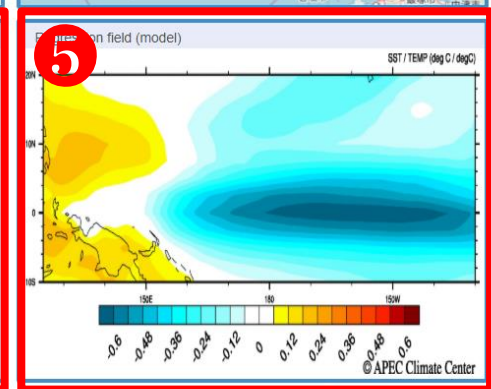
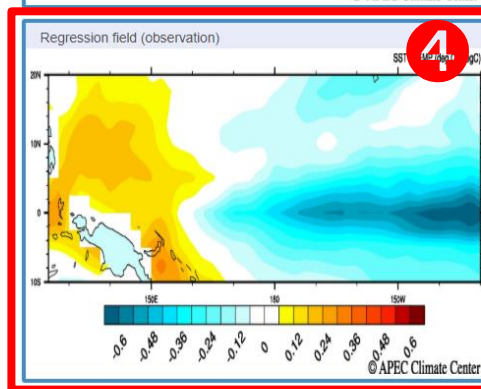
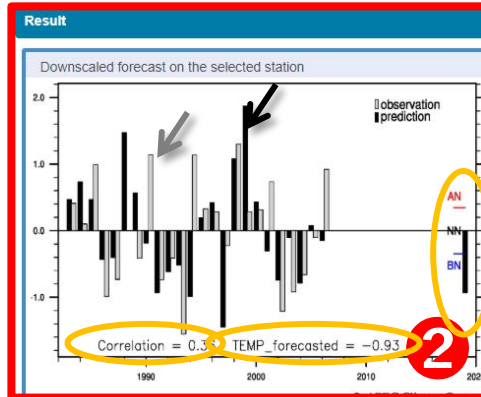
JOB ID	9647	CREATE	2019-08-21 19:21:09
DOWNSCALE ID	8700	UPDATE	2019-08-21 19:19:28
PREDICTAND	PREDICTOR		
YEAR/SEASON	2019 / 8	TRAINING PERIOD	1983 / 2006
PREDICTAND	TEMP	VARIABLE	SST
DATASET	Korea 60 Stations [ID:2]	MODELS	APCC,MSC,NASA,NCEP,PNU,POAMA
STATION	1 Stations	REGION	Lat -10~20/ Lon 125~230
SIGNIFICANCE LEVEL	10%		
MINIMUM PATTERN SCORE	0.3		
DESCRIPTION	BUSAN / 2019ASO / TEMP / SST		
FEEDBACK			

Edit View result

Produce a downscaled forecast : temperature over Busan for ASO 2019

C. Check results.

Station ID	Result	Name	Data period for PREC	Data period for TEMP	Correlation
159	Good	Busan	1973/1 ~ 2008/5	1973/1 ~ 2006/12	0.36051



Edit New downscale

1. Job summary
2. Historical time series of downscaled hindcast data, station data, correlation coefficient between them, deterministic forecast, and tercile category of the forecast
3. Location of station
4. Regressed predictor (SST; observation) field onto the predictand (temperature) over the selected domain
5. Regressed predictor (SST; model) field onth the preidctand (temperature) over the selected domain

Produce a downscaled forecast : temperature over Busan for ASO 2019

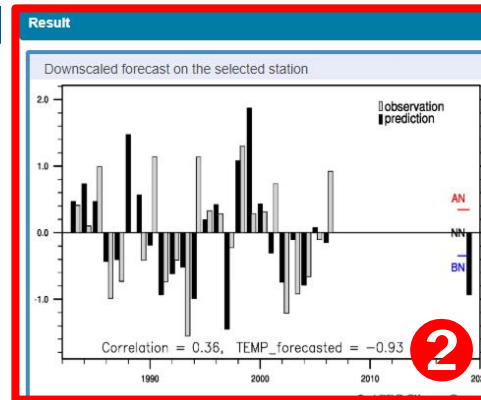
C. Check results.

Details

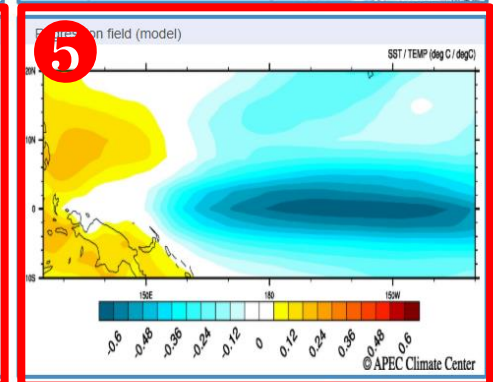
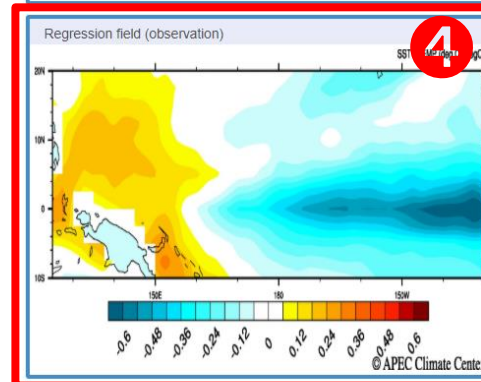
JOB ID	9647	JOB DESCRIPTION	BUSAN / 2019ASO / TEMP / SST
PREDICTAND		PREDICTOR	
YEAR/SEASON	2019 / 8	TRAINING PERIOD	1983 / 2006
PREDICTAND	TEMP	VARIABLE	SST
DATASET	Korea 60 Stations	MODELS	<input checked="" type="radio"/> SCM <input type="radio"/> APCC <input type="radio"/> MSC <input type="radio"/> NASA <input type="radio"/> NCEP <input type="radio"/> PNU <input type="radio"/> POAMA
REGION	1 Stations	REGION	Lat : -10 ~ 20 , Lon : 125 ~ 230
SIGNIFICANCE LEVEL	10%		
MINIMUM PATTERN SCORE	0.3		

Selected Stations

Station ID	Result	Name	Data period for PREC	Data period for TEMP	Correlation
159	Good	Busan	1973/1 ~ 2008/5	1973/1 ~ 2006/12	0.36051



- SCM
- Below-normal temp
- Good
- Cor. Coefficient: 0.36



Edit New downscale

Produce a downscaled forecast : temperature over Busan for ASO 2019

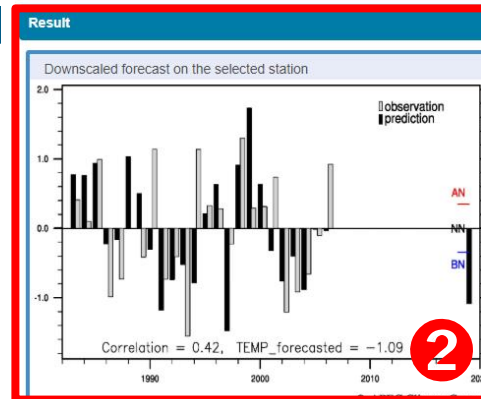
C. Check results.

Details

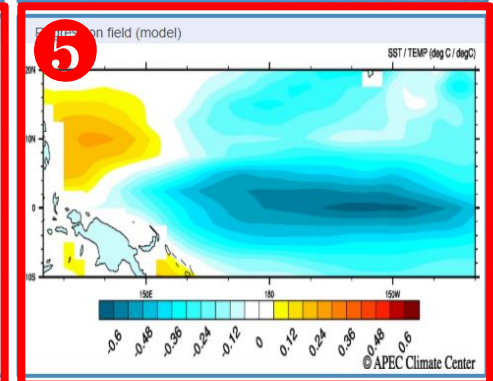
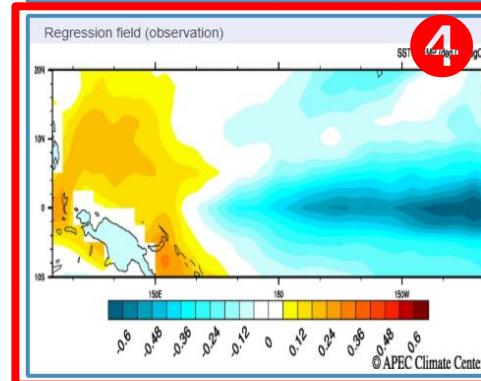
JOB ID	9647	JOB DESCRIPTION	BUSAN / 2019ASO / TEMP / SST
PREDICTAND		PREDICTOR	
YEAR/SEASON	2019 / 8	TRAINING PERIOD	1983 / 2006
PREDICTAND	TEMP	VARIABLE	SST
DATASET	Korea 60 Stations	MODELS	<input checked="" type="radio"/> SCM <input checked="" type="radio"/> APCC <input type="radio"/> MSC <input type="radio"/> NASA <input type="radio"/> NCEP <input type="radio"/> PNU <input type="radio"/> POAMA
REGION	1 Stations	REGION	Lat : -10 ~ 20 , Lon : 125 ~ 230
SIGNIFICANCE LEVEL	10%		
MINIMUM PATTERN SCORE	0.3		

Selected Stations

Station ID	Result	Name	Data period for PREC	Data period for TEMP	Correlation
159	Good	Busan	1973/1 ~ 2008/5	1973/1 ~ 2006/12	0.422663



- APCC
- Below-normal temp
- Good
- Cor. Coefficient: 0.42



Edit New downscale

Produce a downscaled forecast : temperature over Busan for ASO 2019

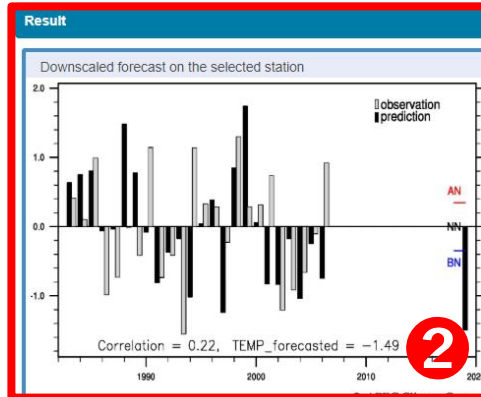
C. Check results.

Details

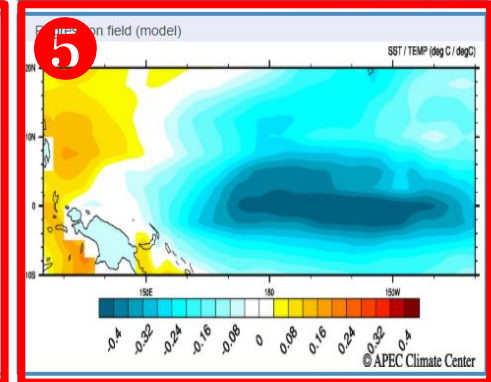
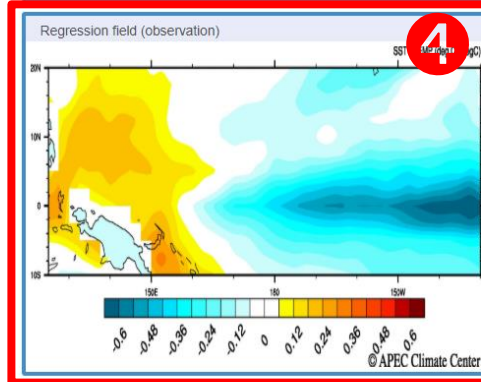
JOB ID	9647	JOB DESCRIPTION	BUSAN / 2019ASO / TEMP / SST
PREDICTAND		PREDICTOR	
YEAR/SEASON	2019 / 8	TRAINING PERIOD	1983 / 2006
PREDICTAND	TEMP	VARIABLE	SST
DATASET	Korea 60 Stations	MODELS	<input type="radio"/> SCM <input type="radio"/> APCC <input type="radio"/> MSC <input type="radio"/> NASA <input checked="" type="radio"/> NCEP <input type="radio"/> PNU <input type="radio"/> POAMA
REGION	1 Stations	REGION	Lat : -10 ~ 20 , Lon : 125 ~ 230
SIGNIFICANCE LEVEL	10%		
MINIMUM PATTERN SCORE	0.3		

Selected Stations

Station ID	Result	Name	Data period for PREC	Data period for TEMP	Correlation
159	Good	Busan	1973/1 ~ 2008/5	1973/1 ~ 2006/12	0.219973



- NCEP
- Below-normal temp
- Good
- Cor. Coefficient: 0.22



Edit New downscale

Exercise

Make your own seasonal climate outlook for SON 2019!

Clik Climate Information Toolkit

MME **Downscale** My Page **2019 / SON** Logout Edit

Job description

[Empty text box]

Predictand

Season: Year Season

Variable: Precipitation Temperature

Predictor

Variable

<input type="radio"/> PREC	<input type="radio"/> T850	<input type="radio"/> Z500
<input type="radio"/> SLP	<input type="radio"/> U850	<input type="radio"/> V850
<input type="radio"/> U200	<input type="radio"/> V200	<input type="radio"/> SST

Models

Select Variable

Training Period

From To

Method

Linear Regression

Advanced Options

Significance Level %

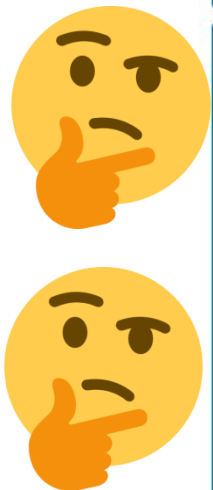
Minimum Pattern Score

Domain

Latitude: ~ Longitude: ~

5000km

< Previous Downscale >





Thank you!