



## **CORDEX domains for model integrations (updated 23/10/15)**

This note presents the regions used for the CORDEX regional climate model integrations project and defines the RCM interior domain, i.e. the area left once the relaxation zone is excluded. Some of the domain non-rotated coordinates are shown in bold and indicate the latest corrected values from the previous document. The major difference from the document updated on 25/06/2010 is the inclusion of a new domain covering the Arab region. This leads to a total of 13 CORDEX regions.

Note that the grid resolution is set to 0.44 degree by 0.44 degree for the RCMs using a rotated pole system where the model operates over an equatorial domain with a quasi-uniform resolution of approximately 50km.

### **1. Domain definition**

Each of the regions presented is defined by the following parameters:

#### **A) Parameters needed by an RCM using a rotated pole coordinate system:**

1. Coordinates of the rotated pole in rotated coordinates:

RotPole (Longitude; Latitude)

2. Coordinates of the Top Left Corner (TLC) in rotated coordinates:

TLC (Longitude; Latitude)

3. Number of grid point in the East-West direction:

Nx

4. Number of point in the North-South direction:

Ny

#### **B) Parameters for RCM using other system coordinates (in non-rotated coordinates):**

5. Coordinates of the TLC, Centre point of the Northern Boundary (CNB) and Top Right Hand Corner (TRC) in non-rotated coordinates:

- TLC (Longitude, Latitude)
- CNB (Longitude, Latitude)
- TRC (Longitude, Latitude)

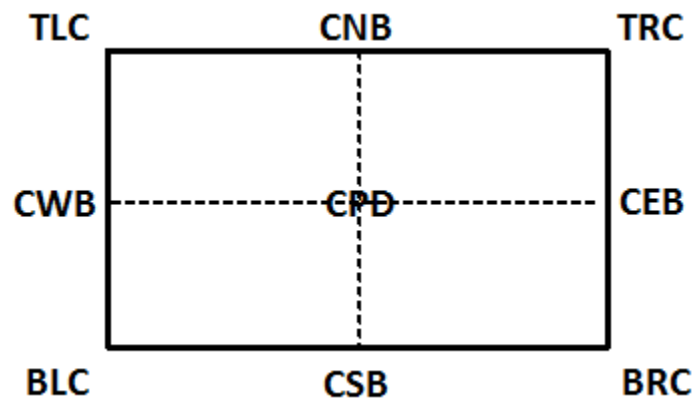
6. Coordinates of the Centre point of the Eastern Boundary (CEB), Centre point of the domain (CPD), Centre point of the Western Boundary (CWB):

- CEB (Longitude, Latitude)
- CPD (Longitude, Latitude)
- CWB (Longitude, Latitude),

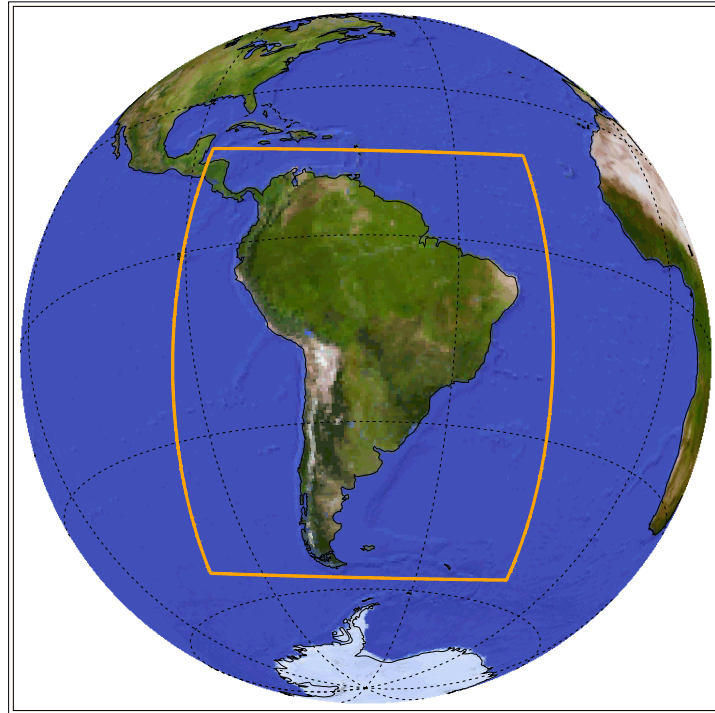
7. Coordinates of the Bottom Left Corner (BLC), Centre point of the Southern Boundary (CSB) and Bottom Right Hand Corner (BRC) in non-rotated coordinates:

Coordinates of the:

- BLC (Longitude, Latitude)
- CSB (Longitude, Latitude)
- BRC (Longitude, Latitude)



**Region 1: South America**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (123.94; -70.6)

TLC (143.92; 34.76)

Nx=146

Ny=167

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (273.26; 18.50)

CNB (300.56; 15.40)

TRC (327.52; 17.23)

CWB (265.88; -17.30)

CPD (299.70; -21.11)

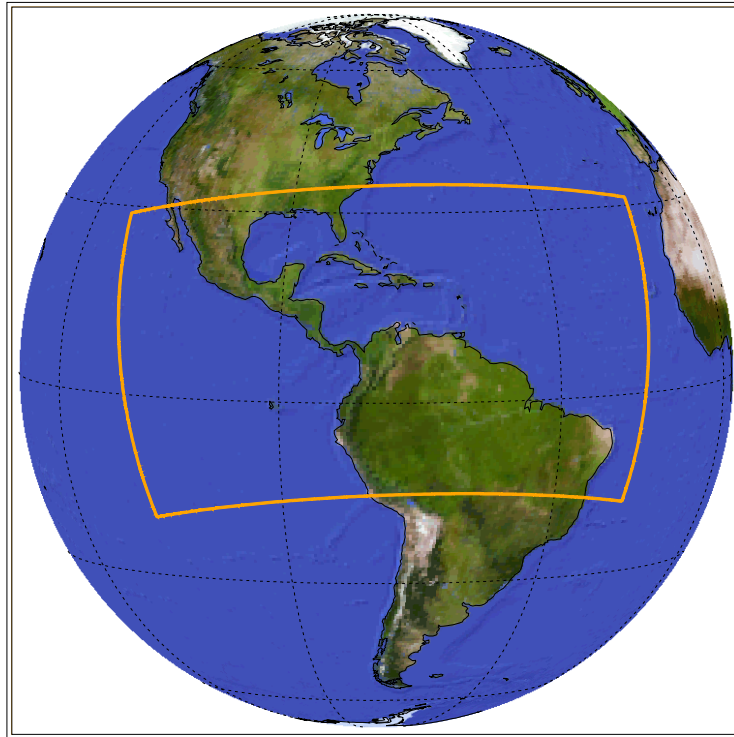
CEB (333.36; -18.84)

BLC (254.28; -52.66)

CSB (298.13; -57.61)

BRC (343.02; -54.6)

**Region 2: Central America**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (113.98; 75.74)

TLC (307.20; 20.68)

Nx=210

Ny=113

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (235.74; 28.79)

CNB (286.45; 34.83)

TRC (337.78; 31.40)

CWB (241.11; 4.68)

CPD (287.29; 10.20)

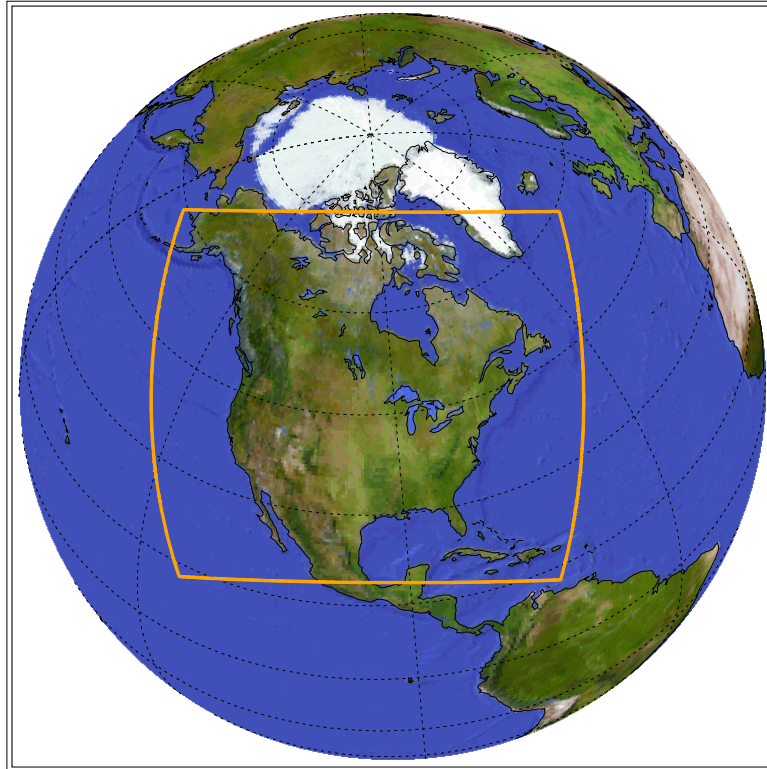
CEB (333.40; 7.10)

BLC (246.10; -19.46)

CSB (288.0; -14.42)

BRC (329.46; -17.23)

**Region 3: North America**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (83.0; 42.5)

TLC (326.12; 28.36)

Nx=155

Ny=130

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (189.26; 59.28)

CNB (263.0; 75.88)

TRC (336.74; 59.28)

CWB (218.32; 37.55)

CPD (263.0; 47.28)

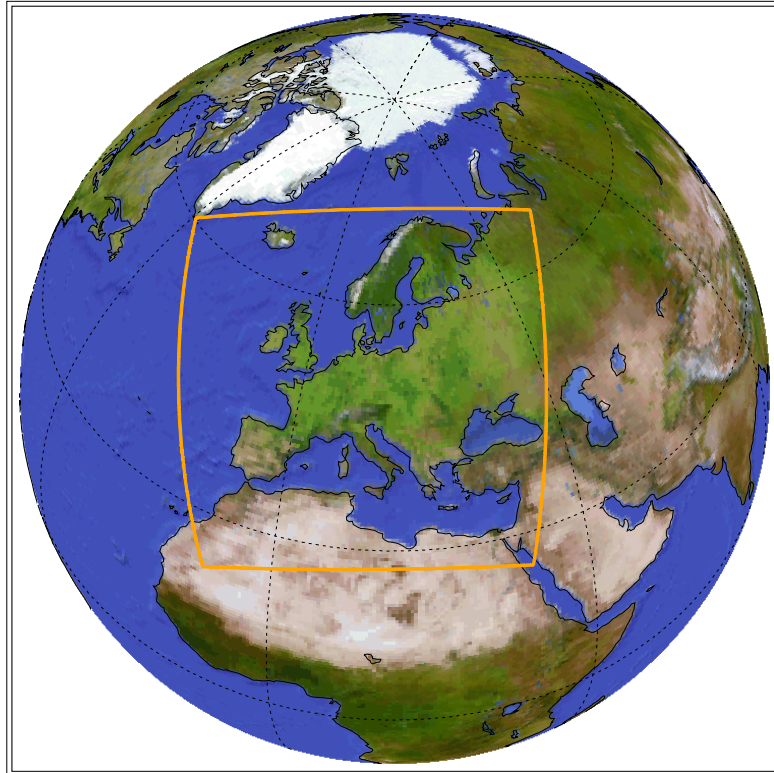
CEB (307.68; 37.55)

BLC (232.84; 12.56)

CSB (263.0; 19.12)

BRC (293.16; 12.55)

**Region 4: Europe (EURO)**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (198.0; 39.25)

TLC (331.79; 21.67)

Nx=106

Ny=103

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (315.86; 60.21)

CNB (1.92; 71.84)

TRC (64.4; 66.65)

CWB (338.23; 42.36)

CPD (9.75; 49.68)

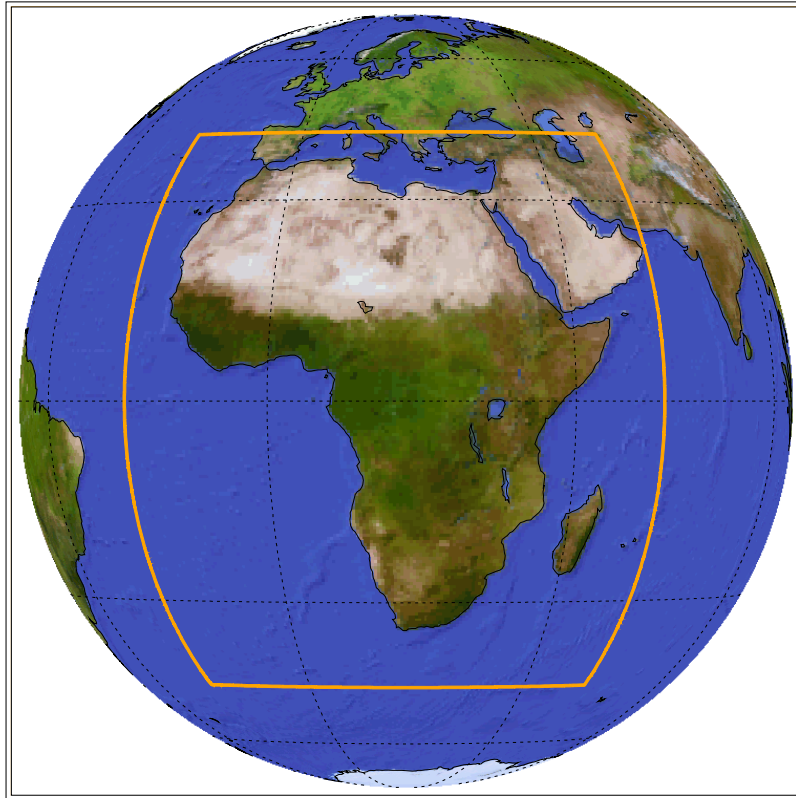
CEB (44.77; 46.72)

BLC (350.01; 22.20)

CSB (12.48; 27.34)

BRC (36.30; 25.36)

**Region 5: Africa**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (180.0; 90.0)

TLC (335.36; 42.24)

Nx=194

Ny=201

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (335.36; 42.24)

CNB (17.60; 42.24)

TRC (60.28; 42.24)

CWB (335.36; -1.32)

CPD (17.60; -1.32)

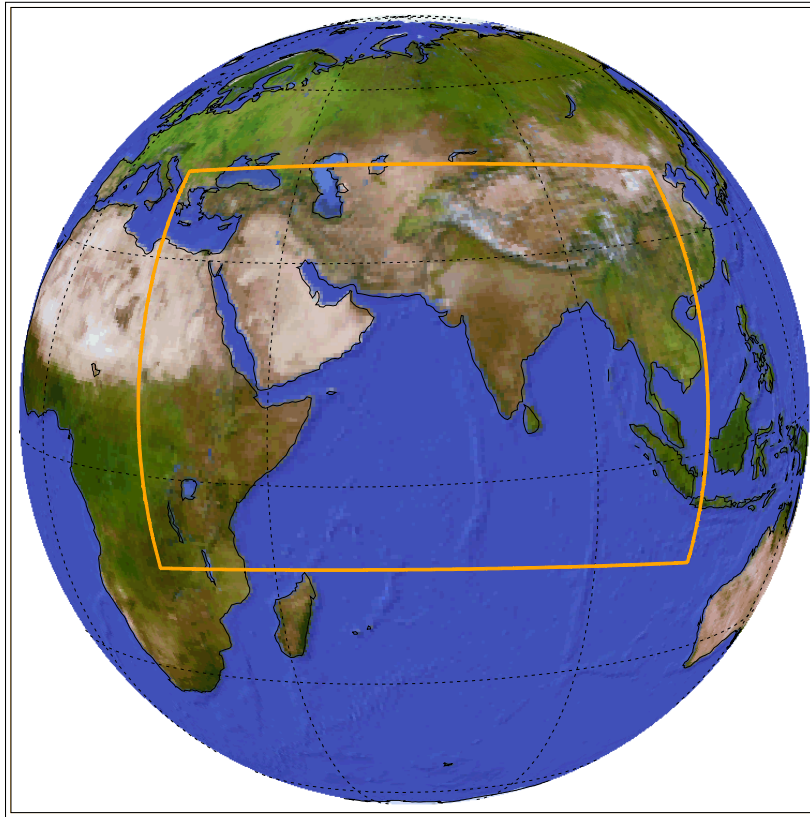
CEB (60.28; -1.32)

BLC (335.36; -45.76)

CSB (17.60; -45.76)

BRC (60.28; -45.76)

**Region 6: South Asia**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (236.66; 79.95)

**TLC (327.88; 35.20)**

Nx=193

Ny=130

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (19.88; 43.5)

CNB (68.41; 45.07)

TRC (115.55; 41.0)

CWB (23.48; 15.51)

CPD (67.18; 16.93)

CEB (110.47; 13.09)

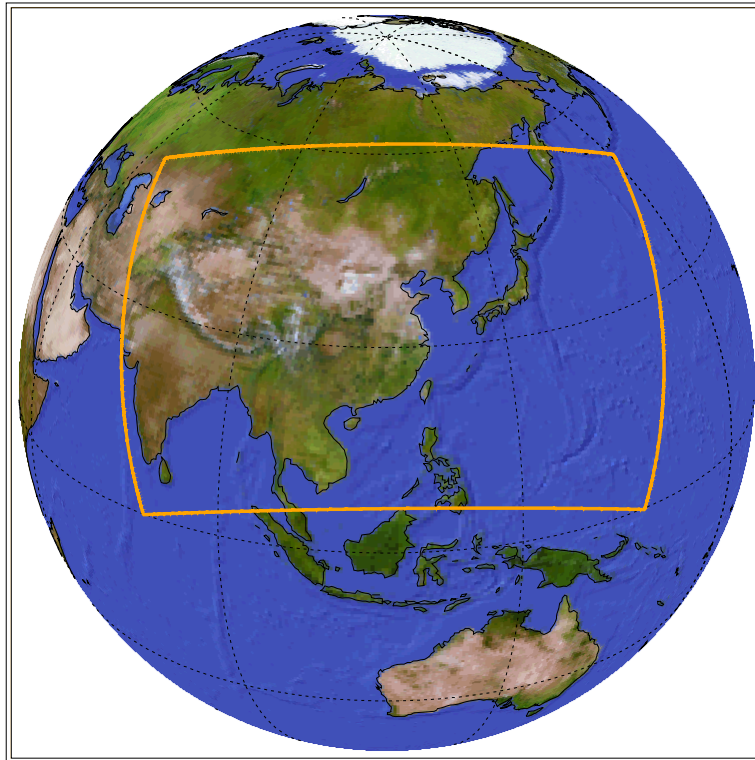
BLC (26.19; -12.97)

CSB (66.29; -11.66)

BRC (106.43; -15.23)



**Region 7: East Asia**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (296.3; 61.0)

TLC (316.77; 32.90)

Nx=203

Ny=167

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (51.59; 50.50)

CNB (116.70; 61.90)

TRC (181.50; 50.31)

CWB (67.11; 25.72)

CPD (116.57; 34.40)

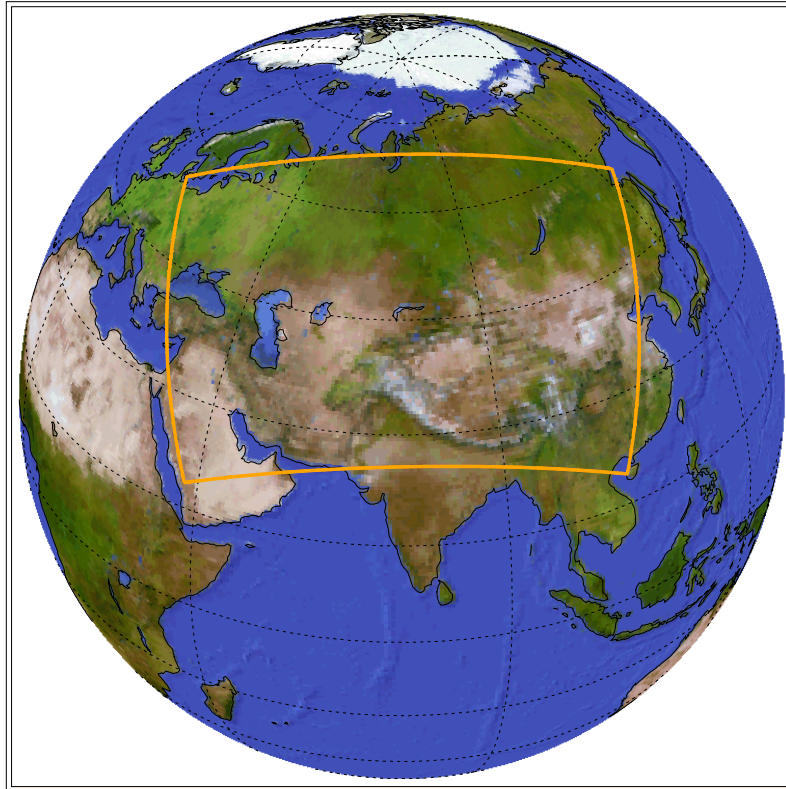
CEB (165.94; 25.56)

BLC (76.91; -0.10)

CSB (116.51; 6.90)

BRC (156.08; -0.24)

**Region 8: Central Asia**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (256.61; 43.48)

TLC (325.68; 22.88)

Nx=153

Ny=100

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (11.05; 54.76)

CNB (73.15; 69.37)

TRC (139.13; 56.48)

CWB (120.10; 39.45)

CPD (74.64; 47.82)

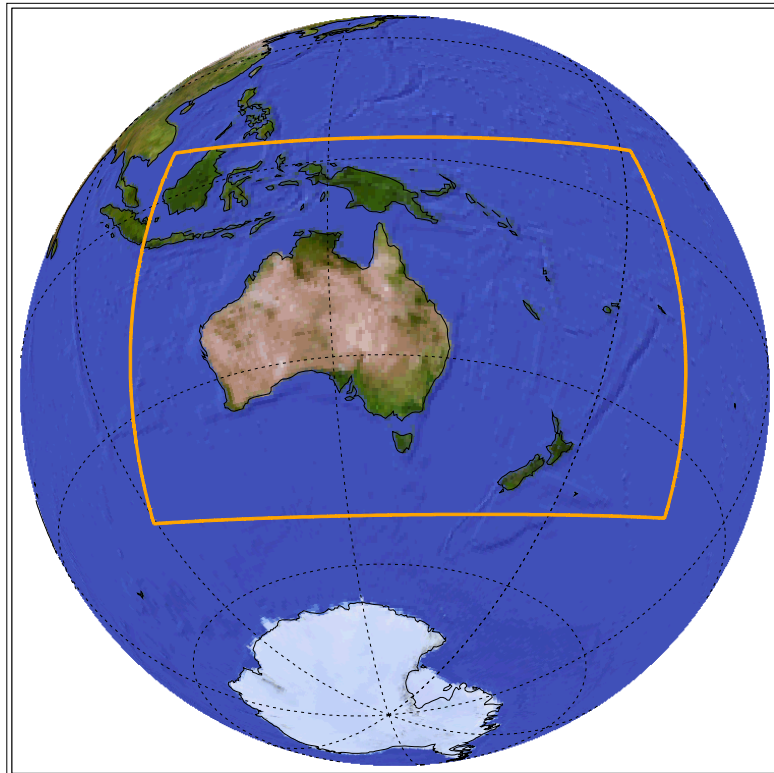
CEB (119.82; 30.07)

BLC (42.41; 18.34)

CSB (75.24; 25.83)

BRC (108.44; 19.39)

**Region 9: Australasia**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (321.38; -60.31)

TLC (142.16; 33.44)

Nx=200

Ny=129

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (110.19; 8.76)

CNB (146.16; 3.87)

TRC (182.02; 12.21)

CWB (101.41; -18.03)

CPD (147.63; -24.26)

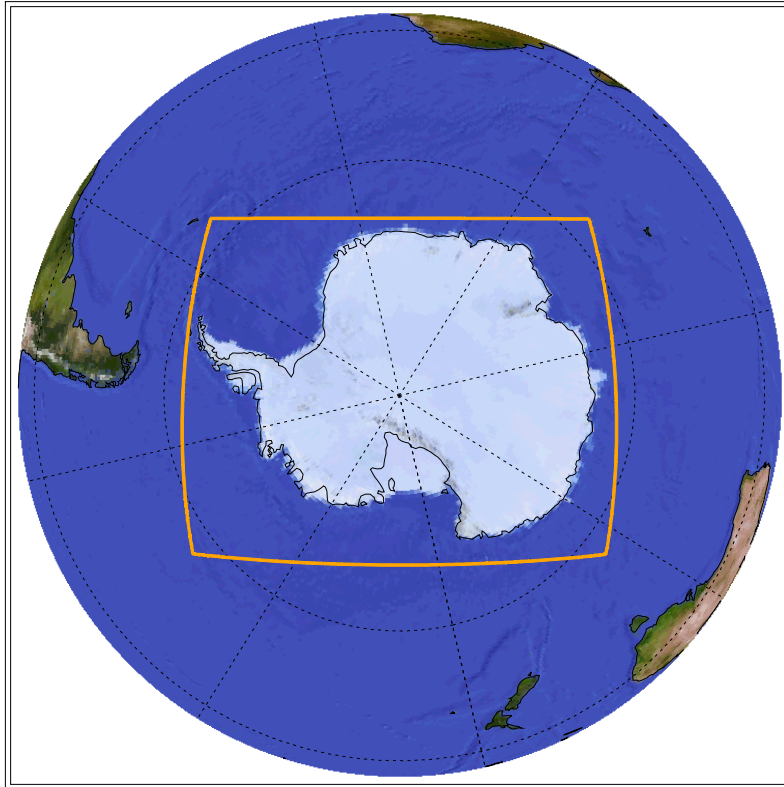
CEB (199.57; -27.90)

BLC (89.25; -44.28)

CSB (150.03; -52.36)

BRC (206.57; -39.25)

## Region 10: Antarctica



### A) For rotated polar RCMs (in rotated coordinates):

RotPole (13.08; -6.08)

TLC (152.72; 14.52)

$N_x=125$

$N_y=97$

### B) For non-rotated polar RCMs (in actual coordinates):

TLC (140.58; -56.0)

CNB (193.08; -63.4)

TRC (245.58; -56.0)

CWB (100.47; -62.88)

CPD (13.08; -89.48)

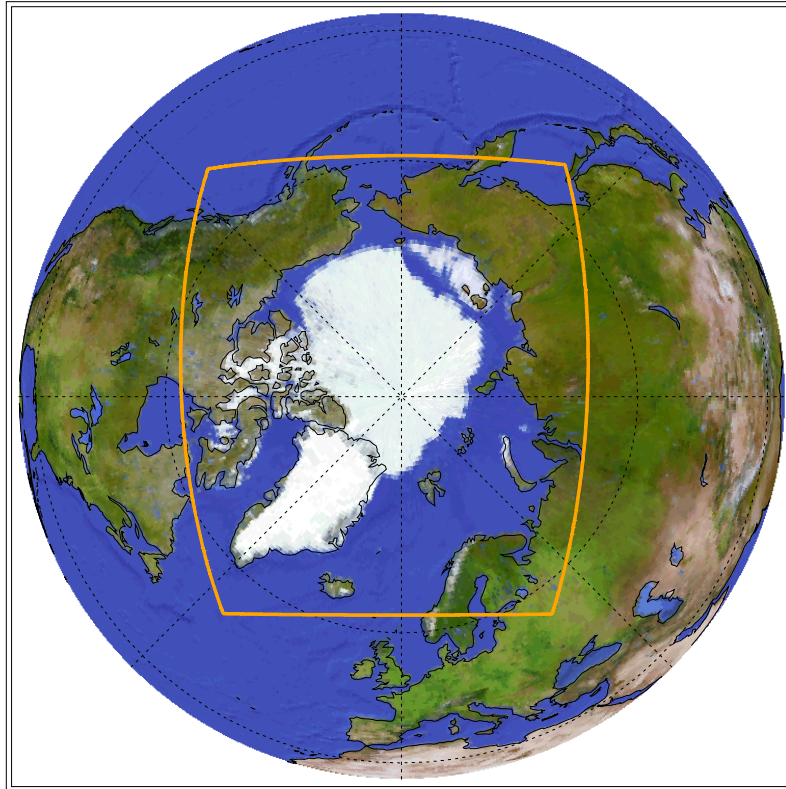
CEB (60.02; -56.26)

BLC (60.02; -56.26)

CSB (13.08; -68.36)

BRC (326.14; -56.26)

**Region 11: Arctic**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (0.0; 6.55)

TLC (337.12; 33.88)

Nx=116

Ny=133

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (214.68; 55.43)

CNB (175.24; 62.56)

TRC (140.59; 52.53)

CWB (273.09; 67.17)

CPD (57.07; 86.86)

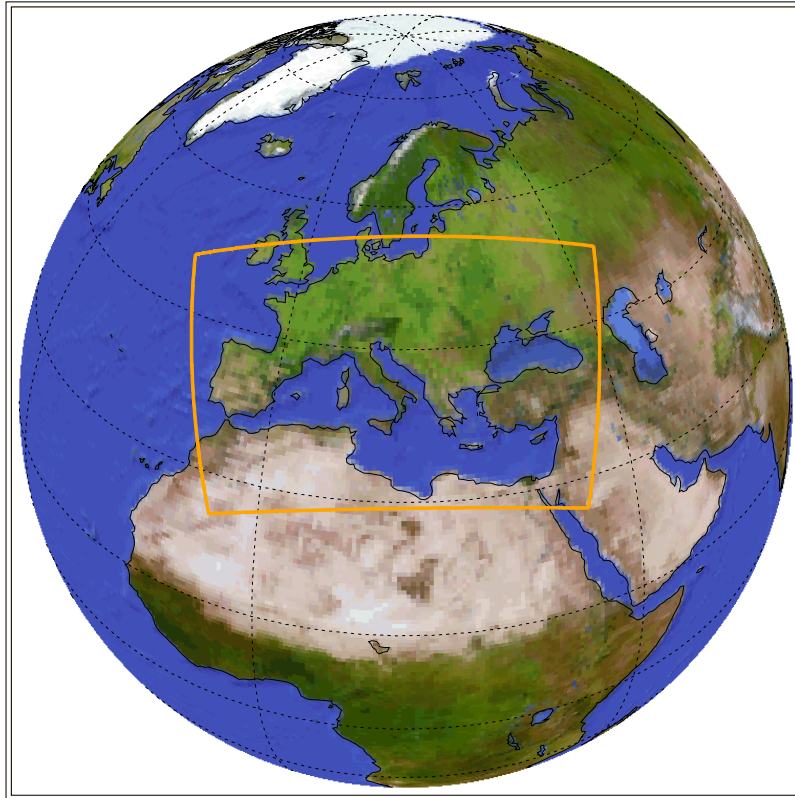
CEB (87.92; 63.37)

BLC (324.82; 52.0)

CSB (4.70; 59.14)

BRC (40.35; 46.06)

**Region 12: Mediterranean (MED)**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (198.0; 39.25)

TLC (336.78; 5.94)

Nx=98

Ny=63

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (339.79; 50.65)

CNB (15.0; 56.66)

TRC (50.85; 52.34)

CWB (348.12; 38.35)

CPD (15.75; 43.02)

CEB (43.41; 39.70)

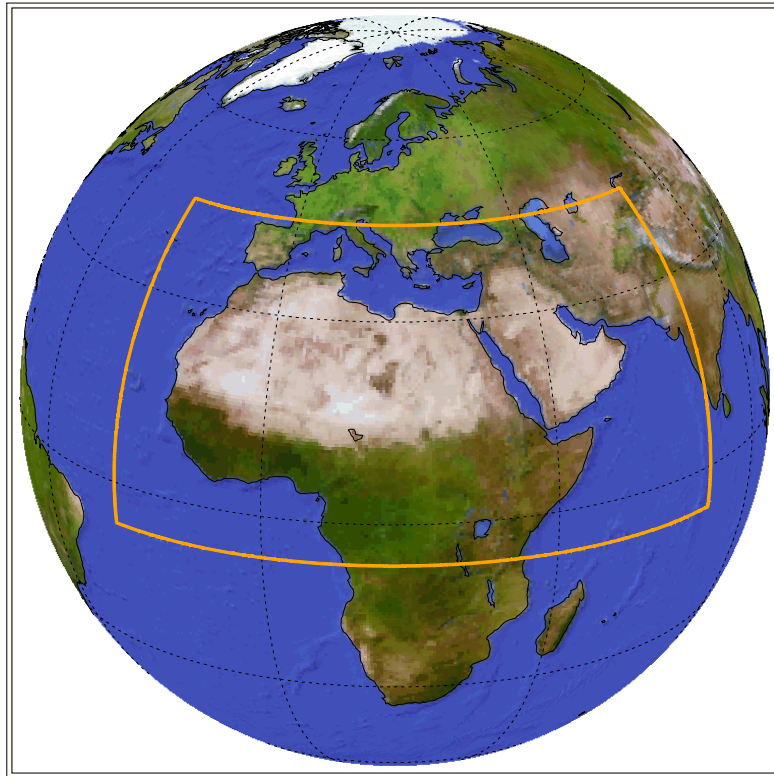
BLC (353.96; 25.63)

CSB (16.22; 29.39)

BRC (38.33; 26.73)



**Region 13: Middle East North Africa (MENA)**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (180.0; 90.0)

TLC (333.6; 44.88)

Nx=232

Ny=118

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC (333.; 45.0)

CNB (24.5; 45.0)

TRC (76.0; 45)

CWB (333.0; 19.0)

CPD (24.5; 19.0)

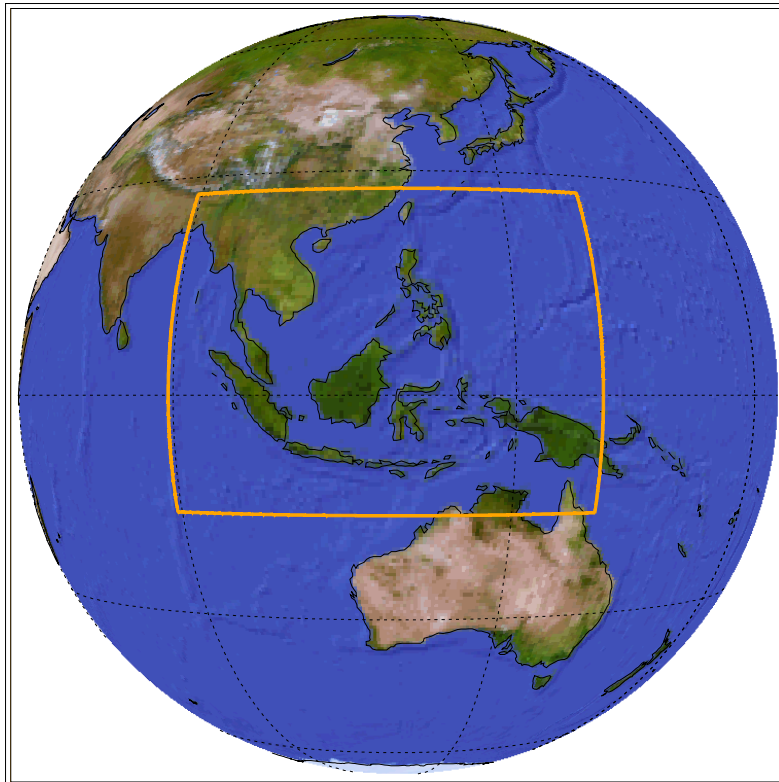
CEB (333.0; 19.0)

BLC (333.0; -7)

CSB (24.5; -7)

BRC (76.0; -7)

**Region 14: South East Asia (SEA)**



**A) For rotated polar RCMs (in rotated coordinates):**

RotPole (180.0; 90.0)

TLC (89.26; 27.28)

Nx=264

Ny=194

**B) For non-rotated polar RCMs (in actual coordinates):**

TLC=(27.26; 89.26)

CNB=(27.26; 118.04)

TRC=(27.26; 146.96)

CWB=(6.5N; 89.26)

CPD=(6.5N;118.04)

CEB=(6.5N; 146.96)

BLC=(-15.14;89.26)

CSB=(-15.14; 118.04)

BRC=(-14.81; 146.96)