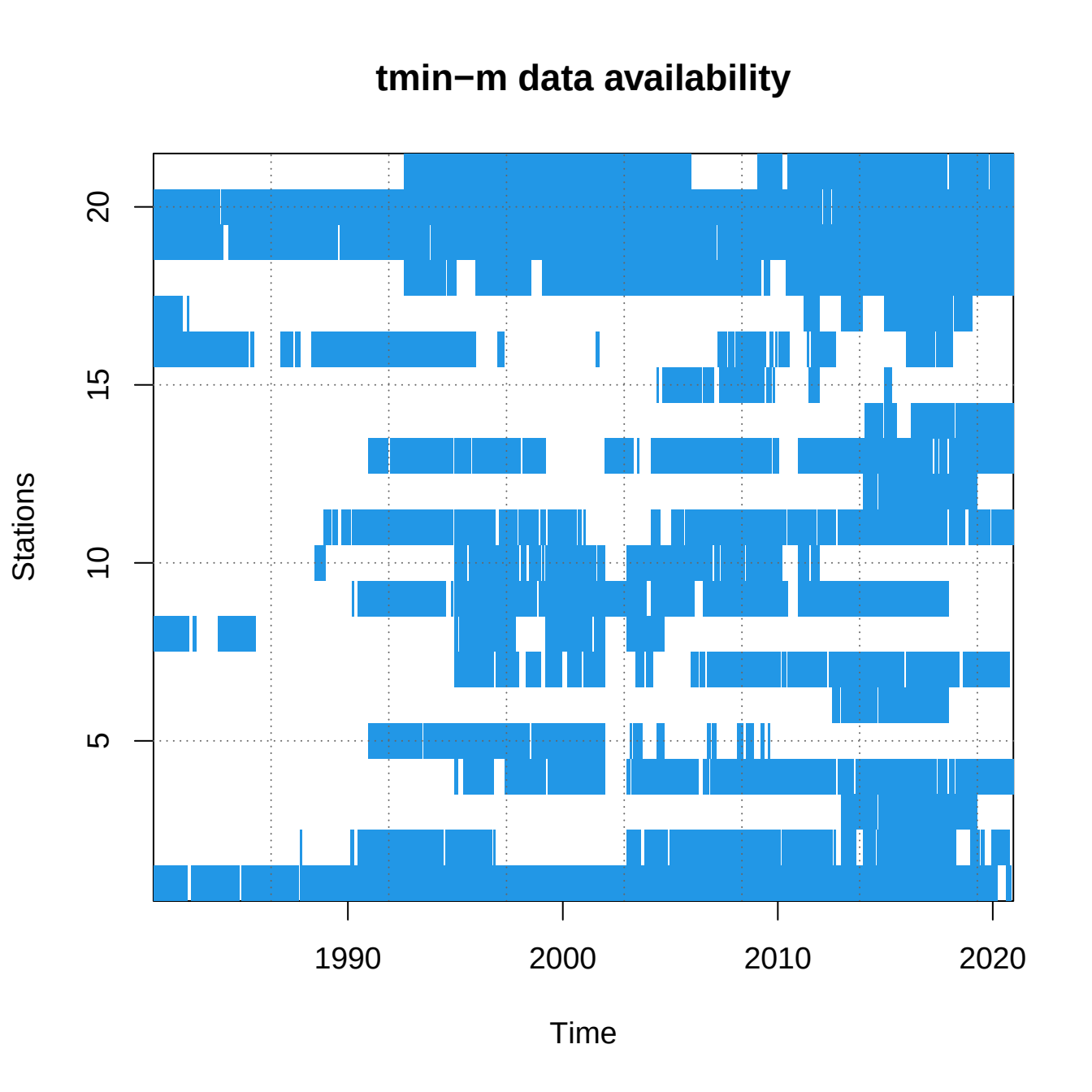
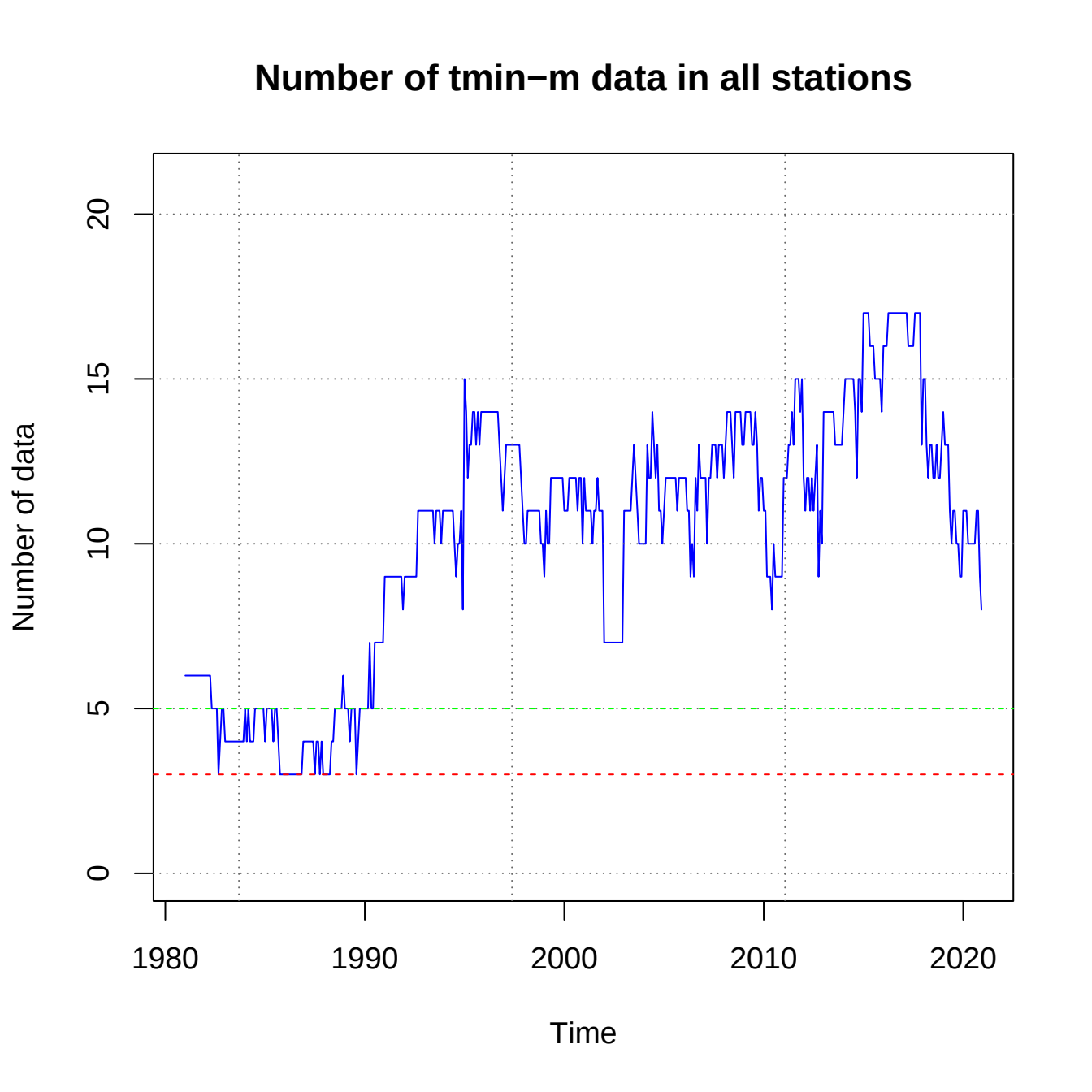
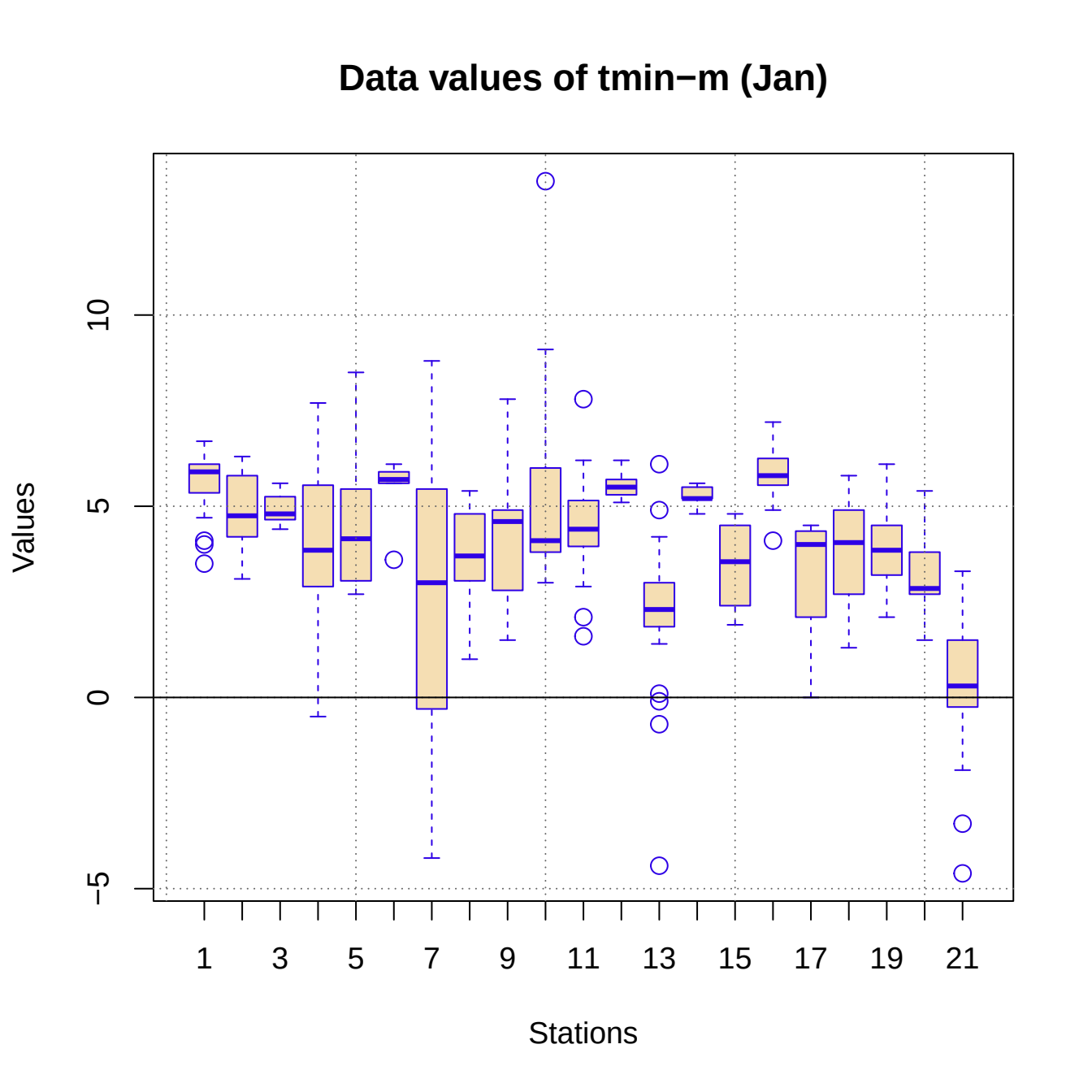
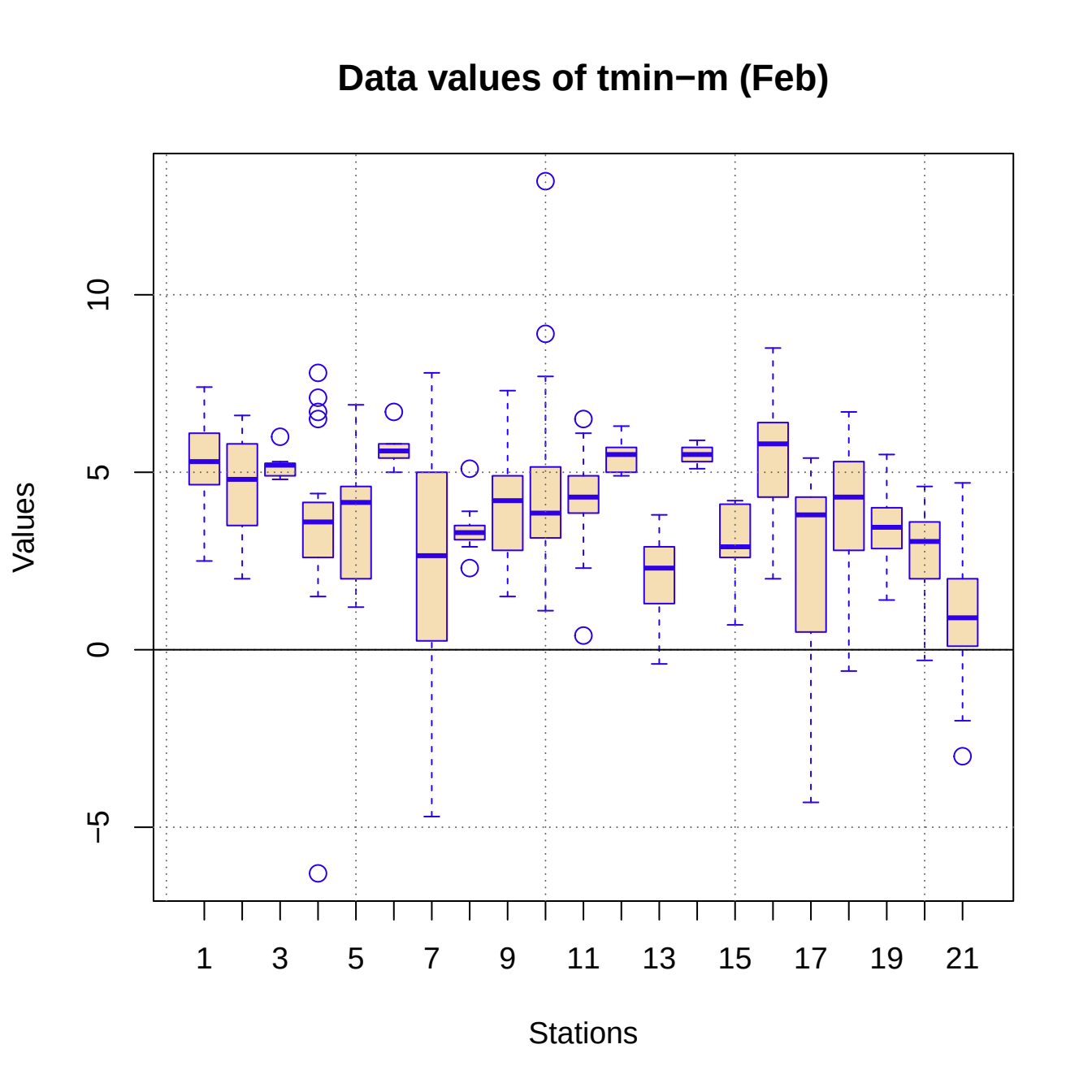
CLIMATOL 3.1.1

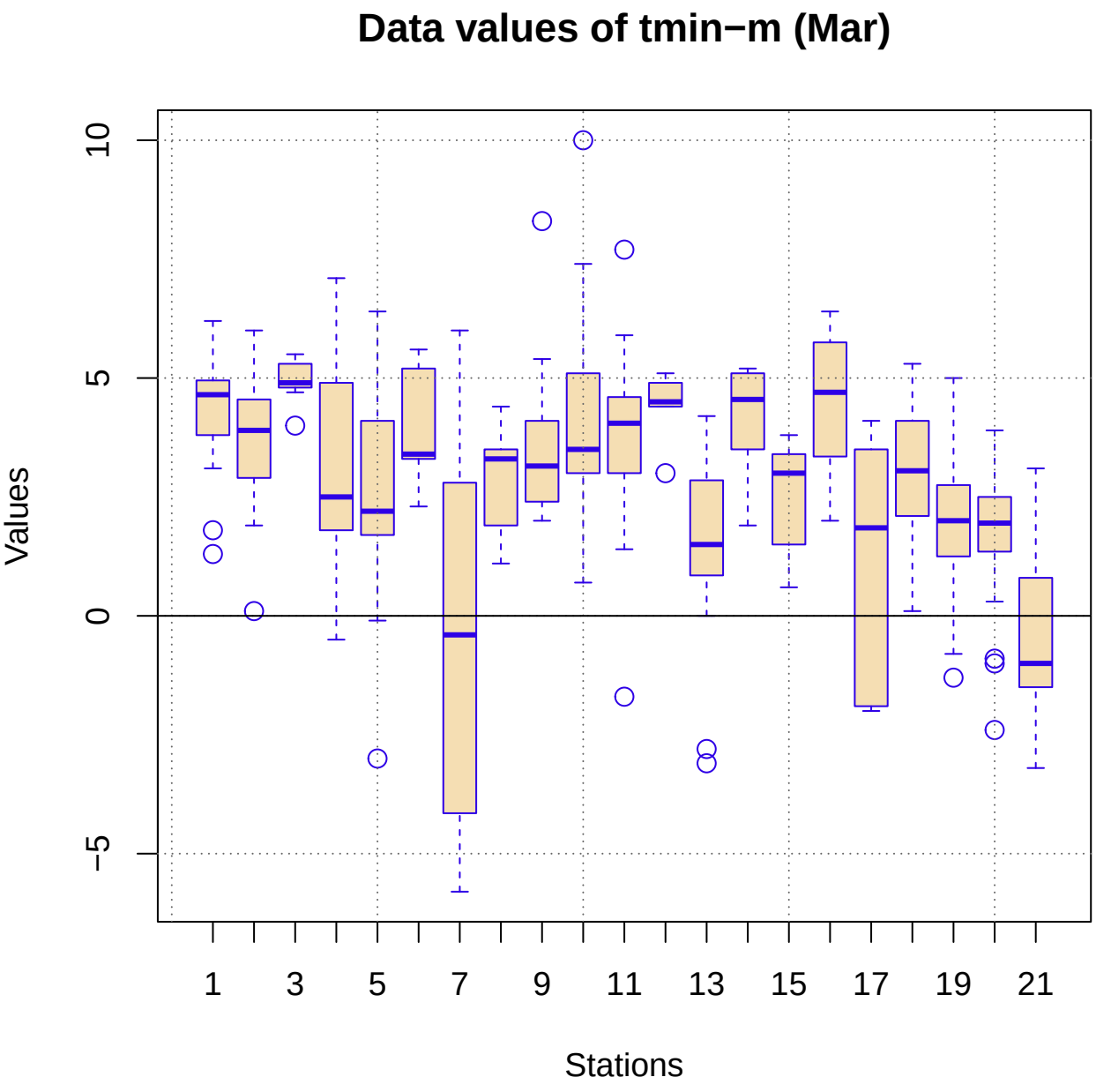
Homogenization
graphic output of
tmin−m
1981−2020

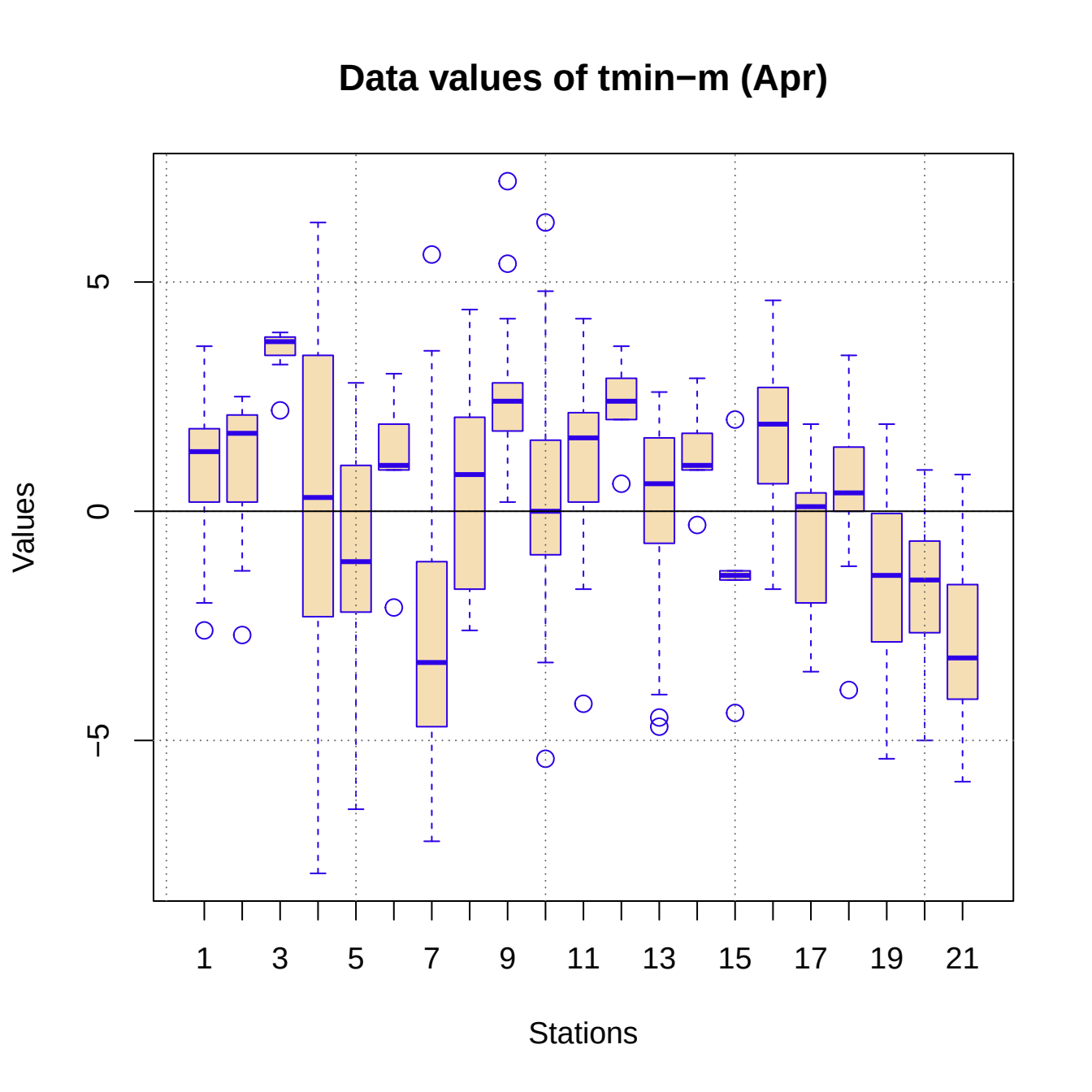

tmin−m data availability
Stations
5
10
15
20
1990
2000
2010
2020
Time

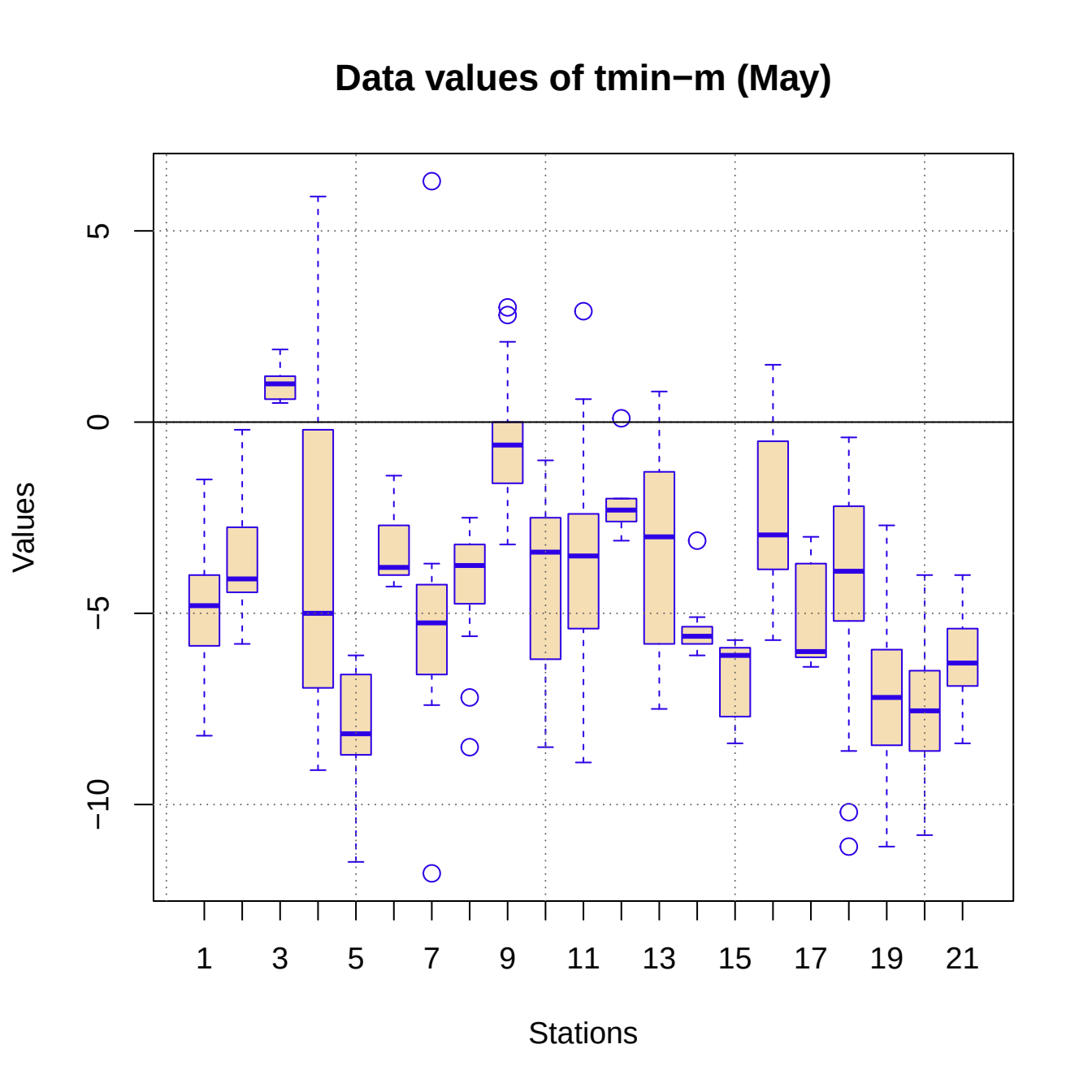

Number of tmin−m data in all stations
Number of data
0
5
10
15
20
1980
1990
2000
2010
2020
Time

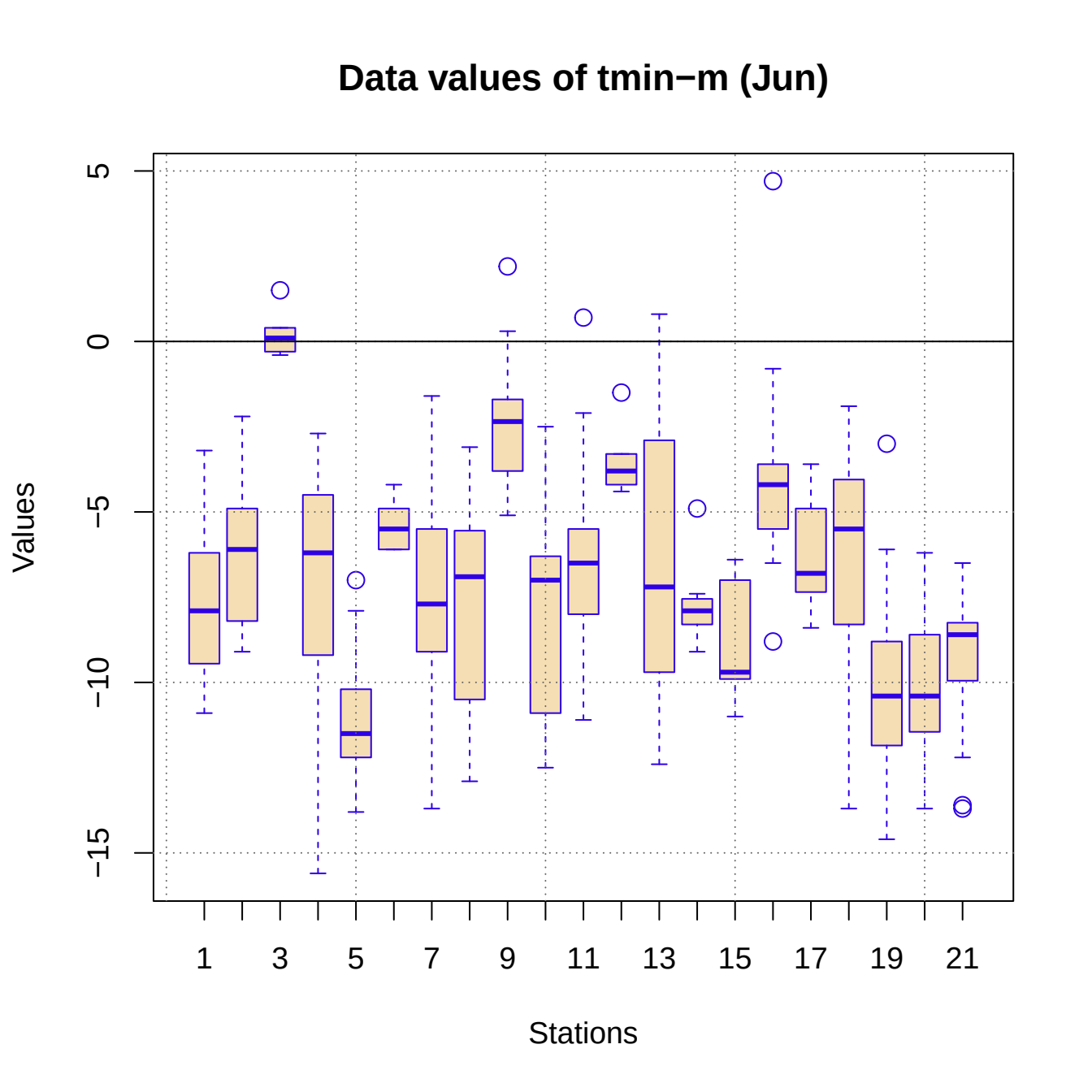

Data values of tmin−m (Jan)
Values
10
5
0
−5
1
3
5
7
9
11
13
15
17
19
21
Stations

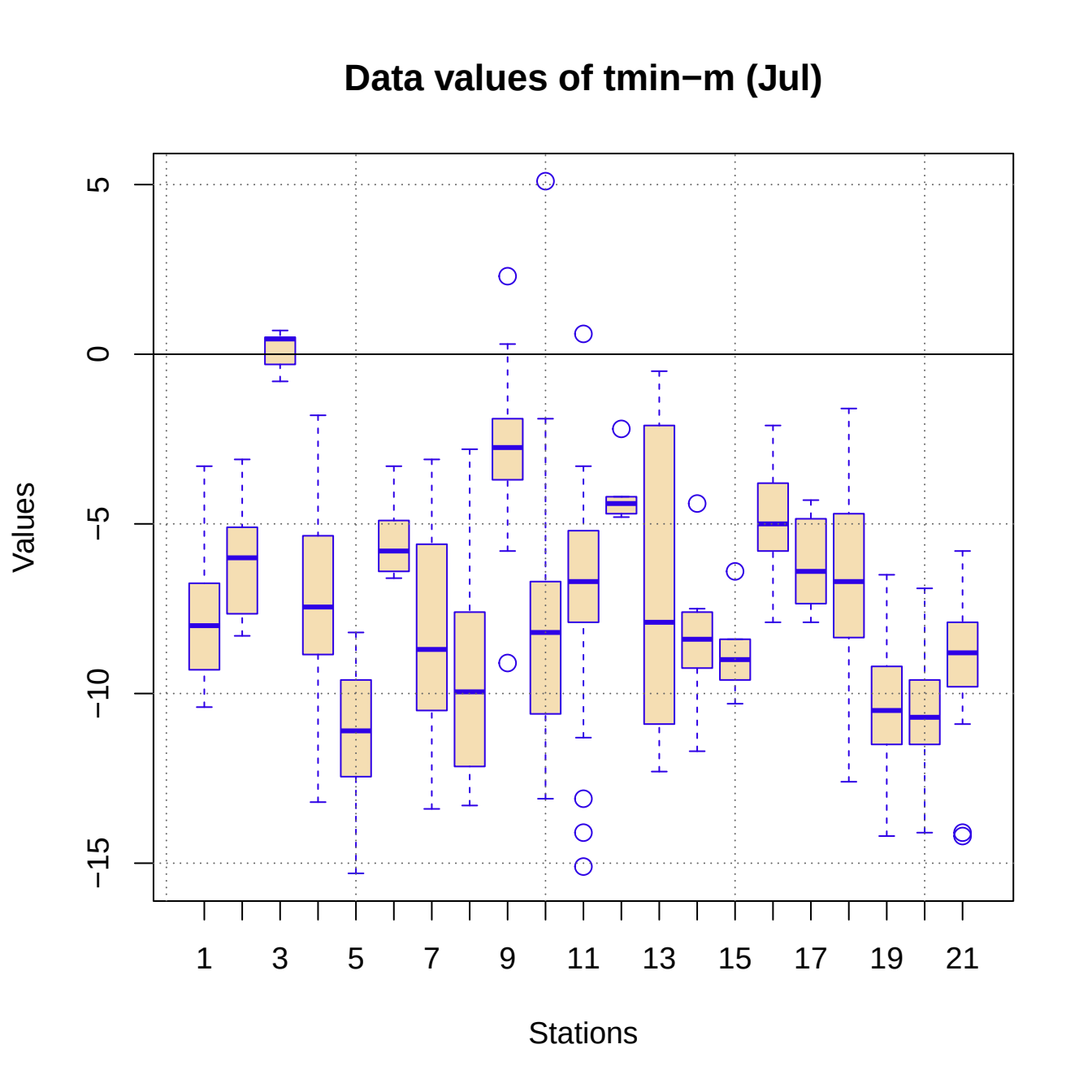

Data values of tmin−m (Feb)
Values
10
5
0
−5
1
3
5
7
9
11
13
15
17
19
21
Stations

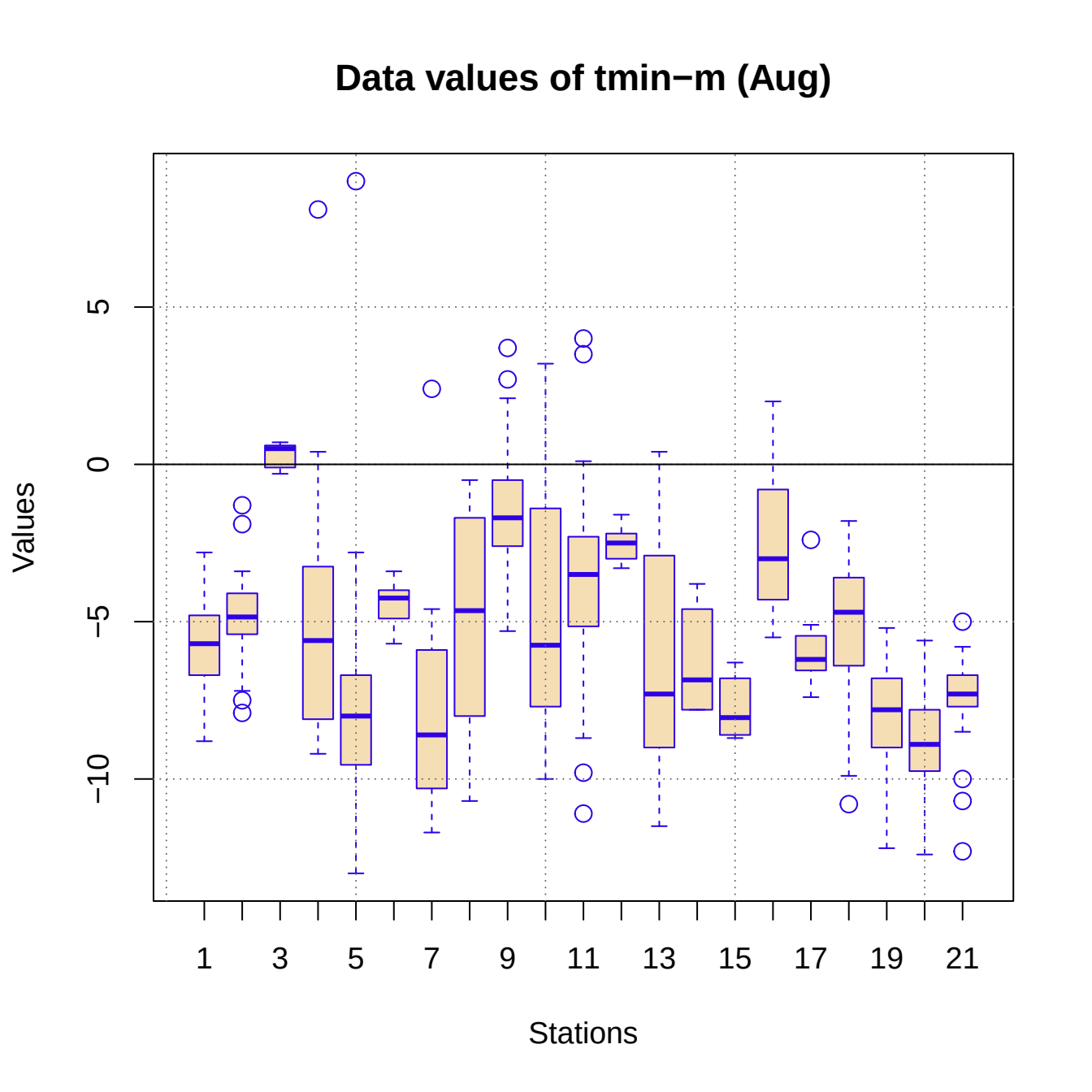

Data values of tmin−m (Mar)
Values
10
5
0
−5
1
3
5
7
9
11
13
15
17
19
21
Stations

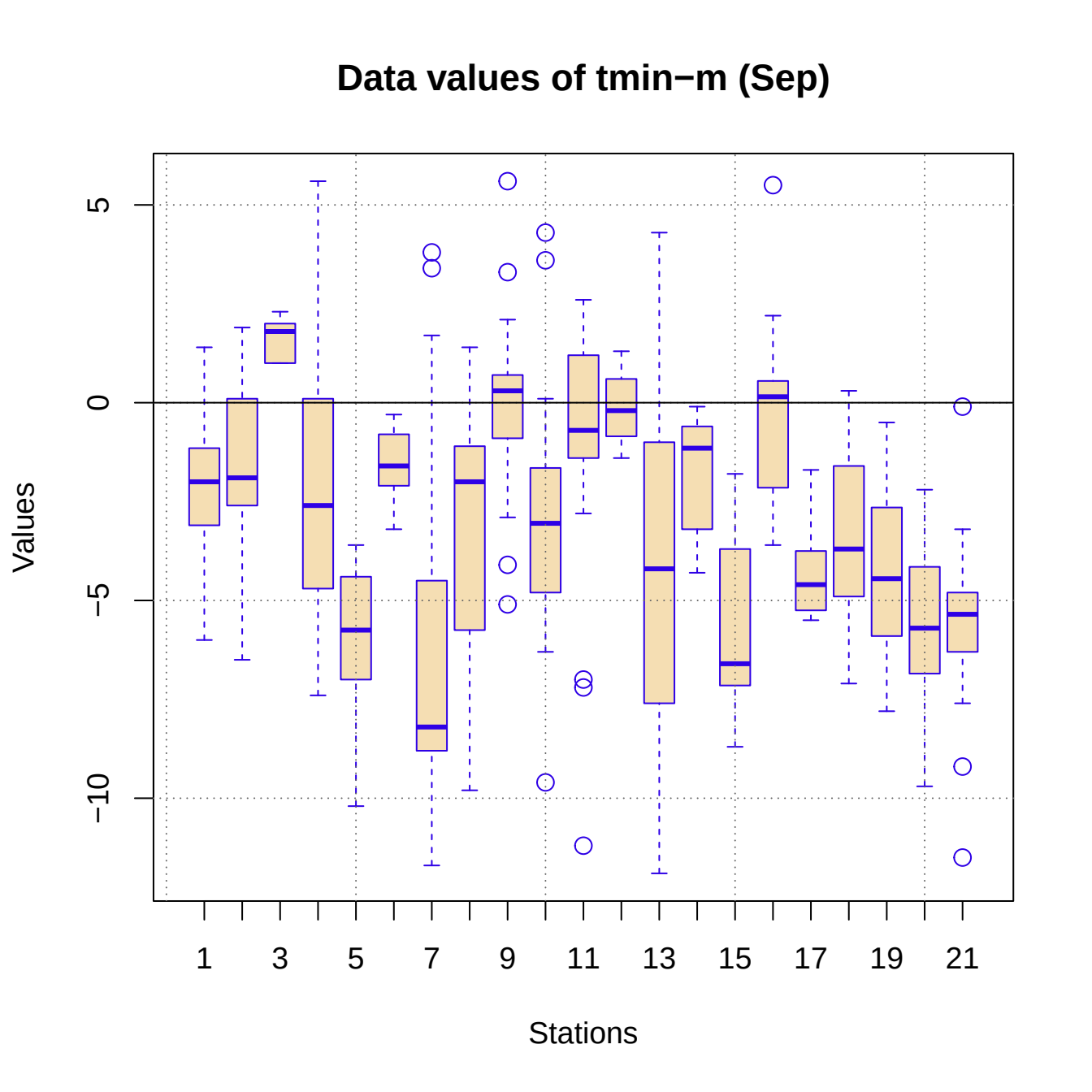

Data values of tmin−m (Apr)
Values
5
0
−5
1
3
5
7
9
11
13
15
17
19
21
Stations

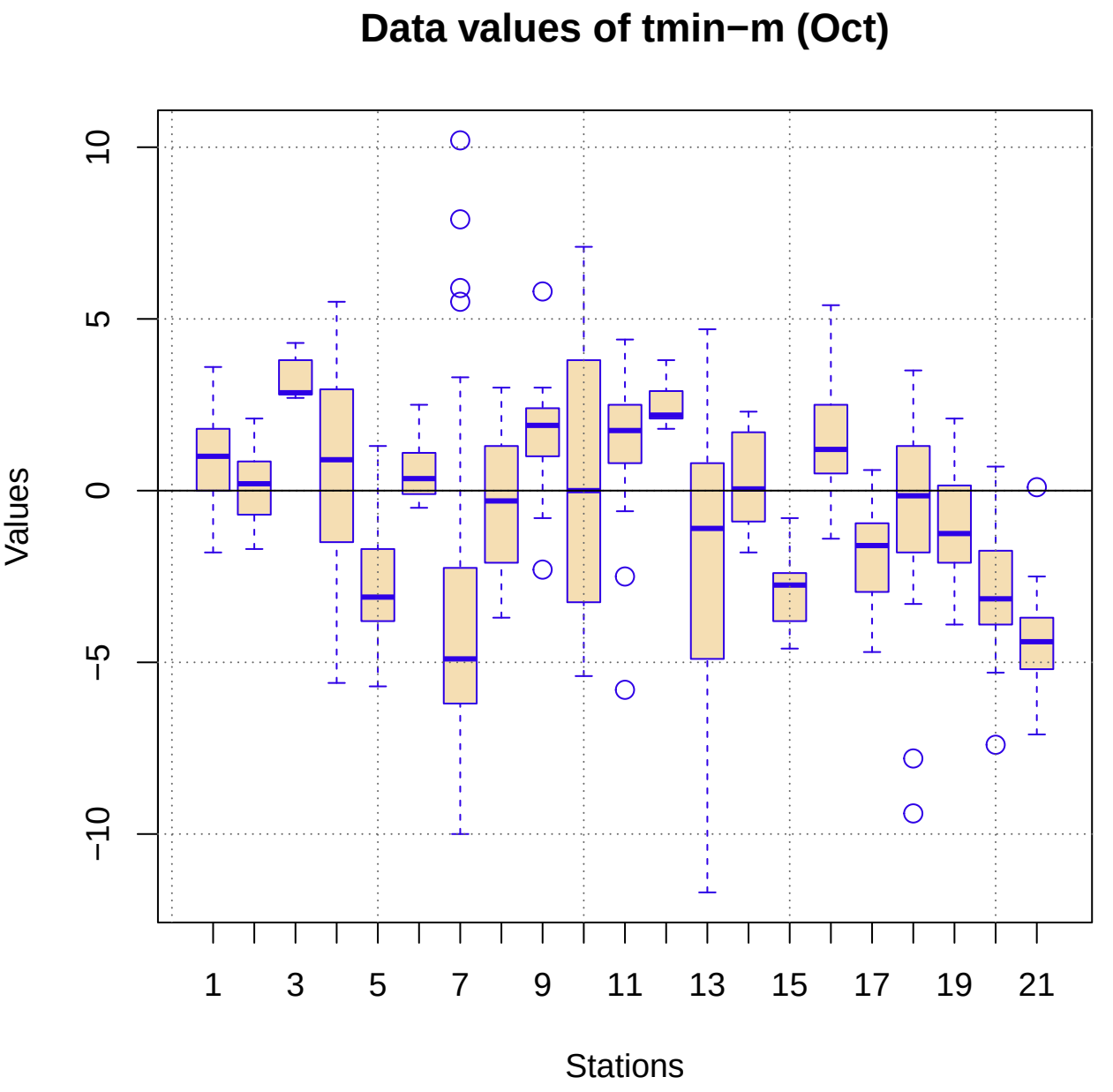

Data values of tmin−m (May)
Values
5
0
−5
−10
1
3
5
7
9
11
13
15
17
19
21
Stations

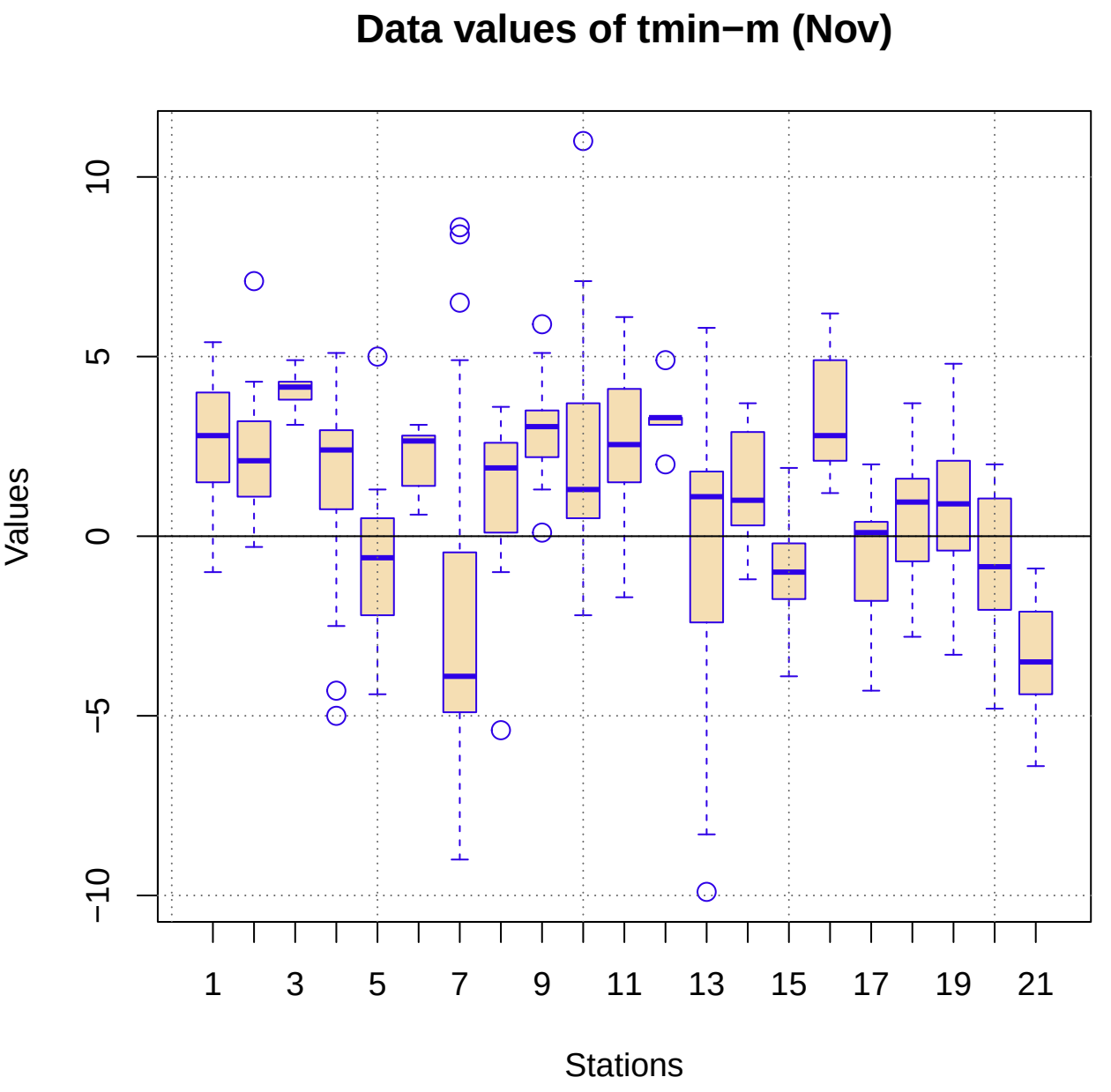

Data values of tmin−m (Jun)
Values
5
0
−5
−10
−15
1
3
5
7
9
11
13
15
17
19
21
Stations

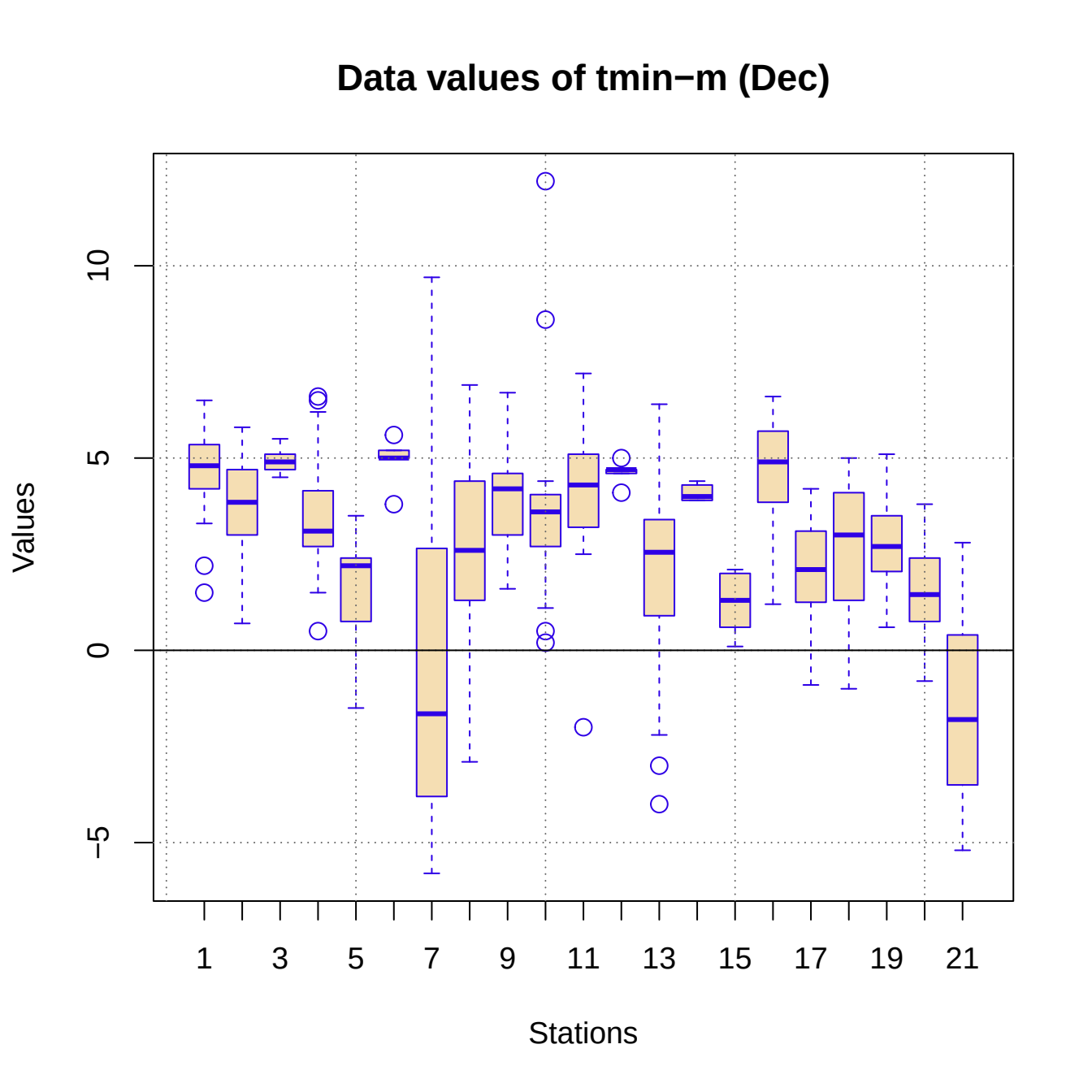

Data values of tmin−m (Jul)
Values
5
0
−5
−10
−15
1
3
5
7
9
11
13
15
17
19
21
Stations

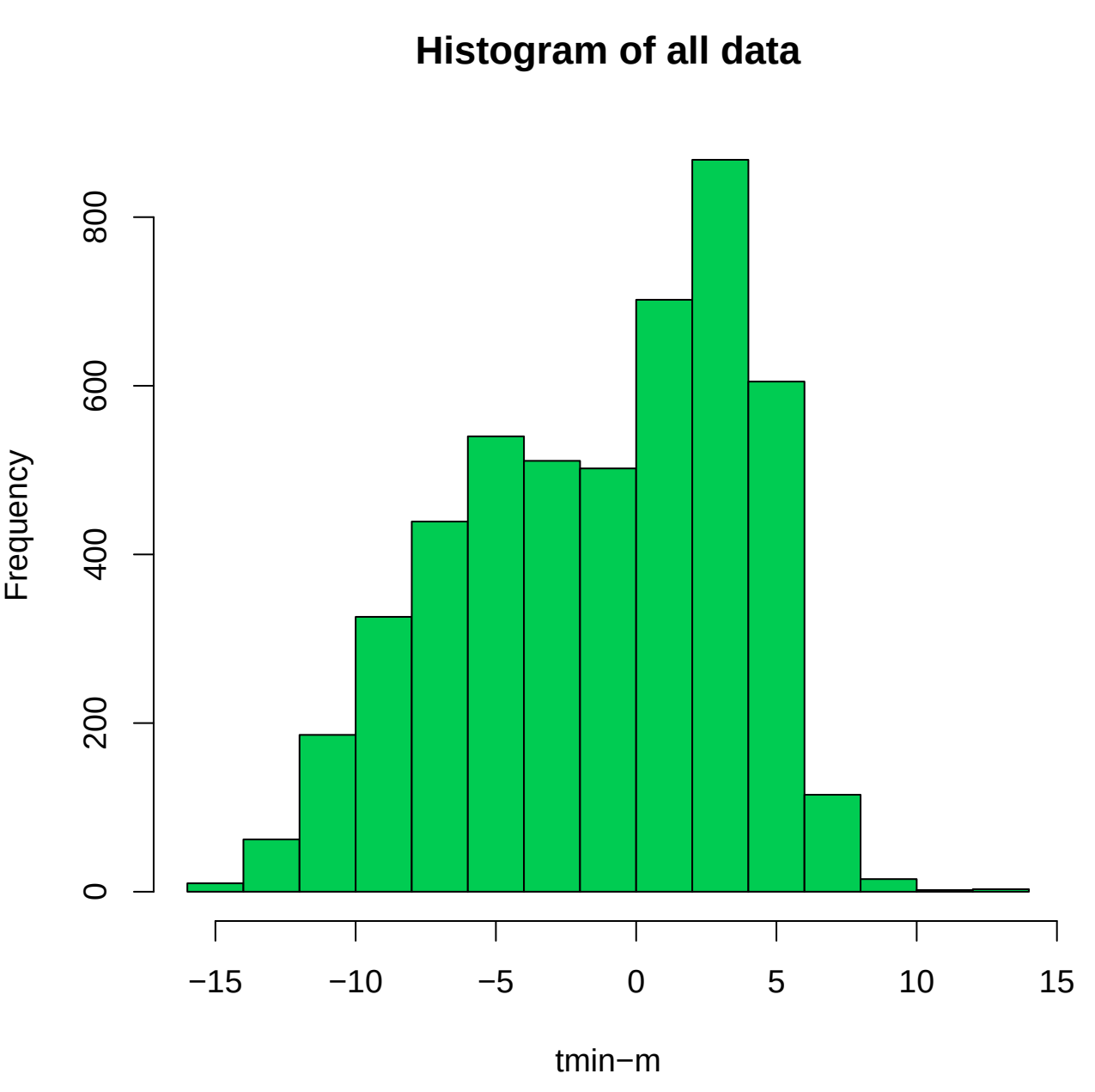

Data values of tmin−m (Aug)
Values
5
0
−5
−10
1
3
5
7
9
11
13
15
17
19
21
Stations

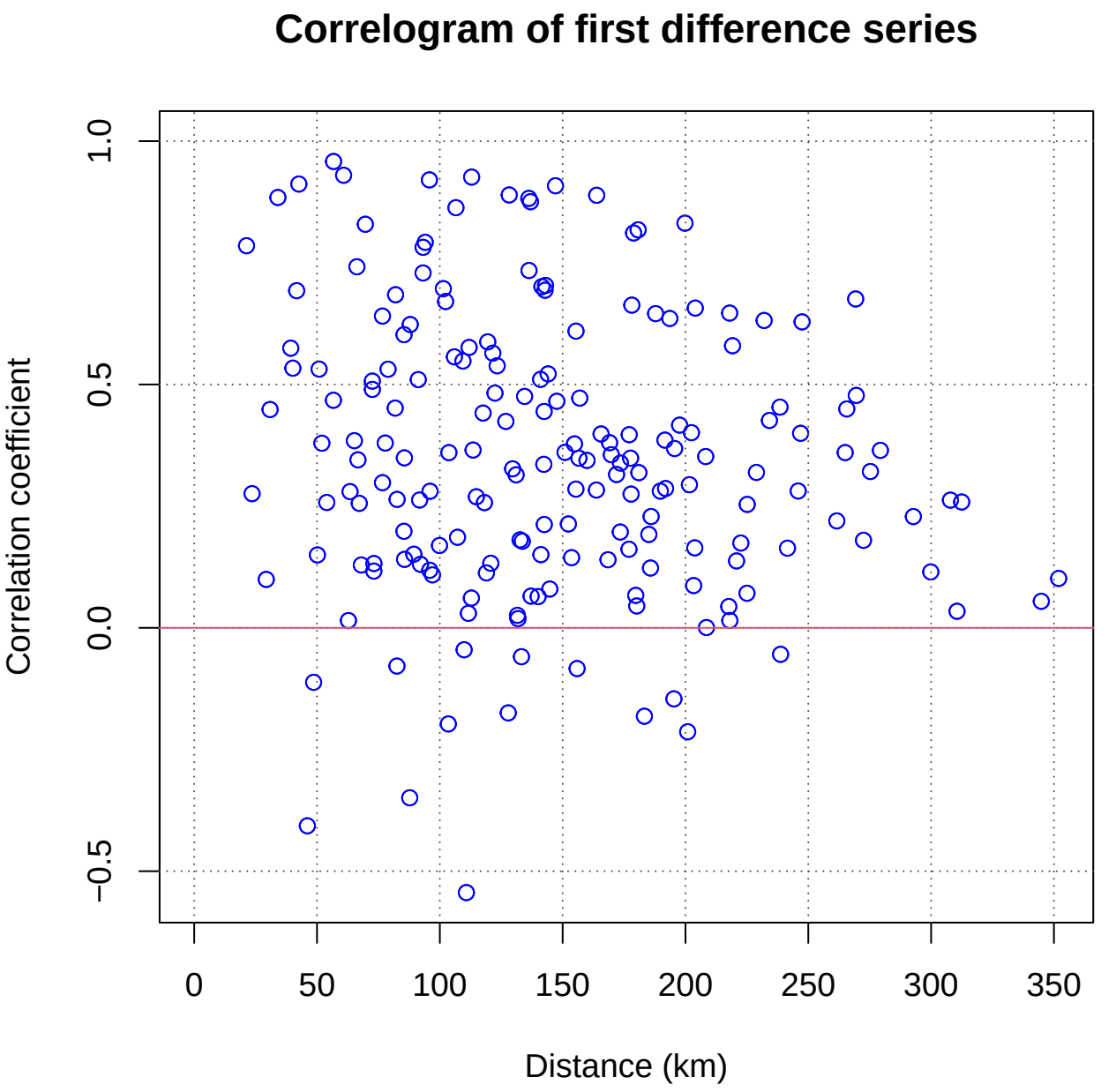

Data values of tmin−m (Sep)
Values
5
0
−5
−10
1
3
5
7
9
11
13
15
17
19
21
Stations

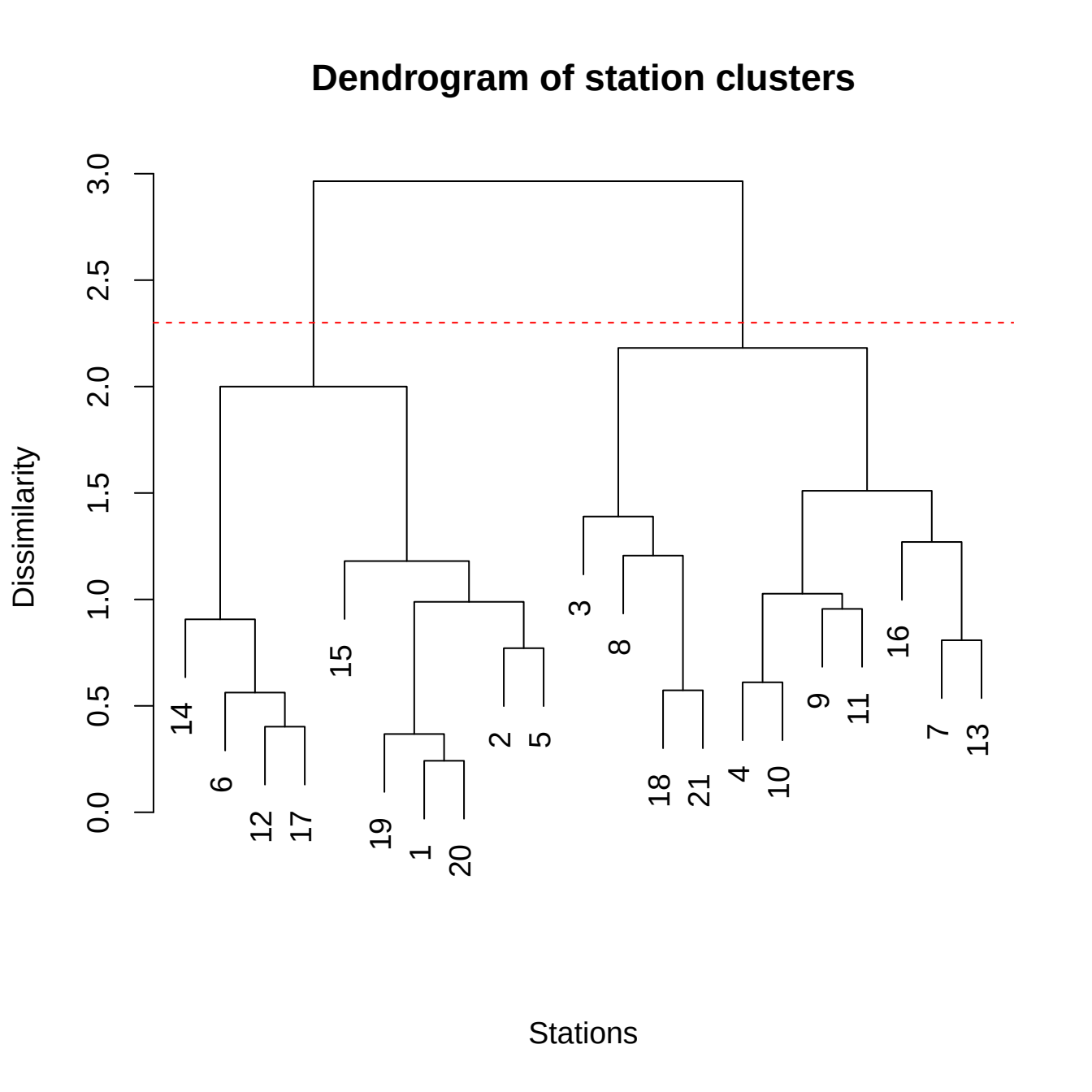

Data values of tmin−m (Oct)
Values
10
5
0
−5
−10
1
3
5
7
9
11
13
15
17
19
21
Stations

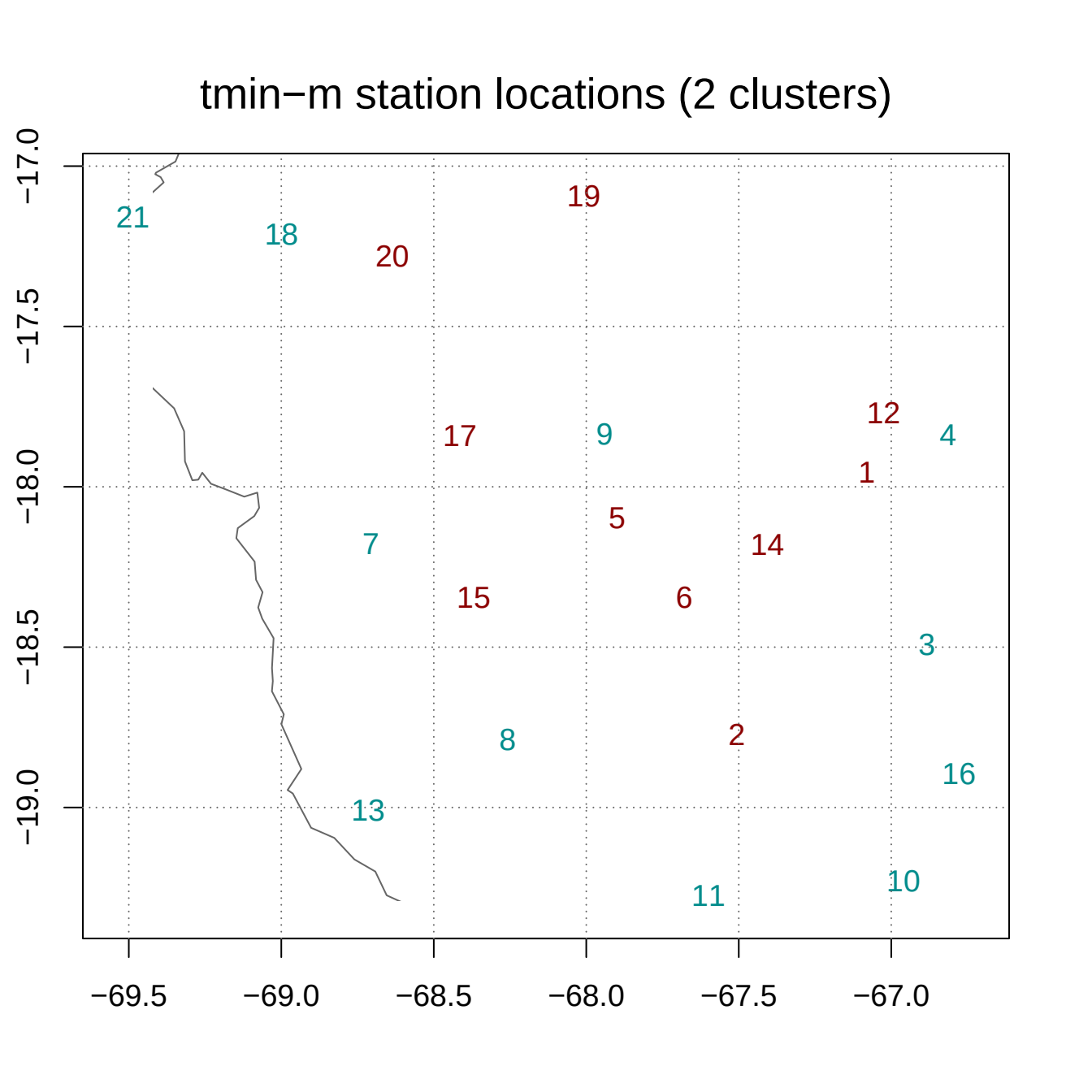

Data values of tmin−m (Nov)
Values
10
5
0
−5
−10
1
3
5
7
9
11
13
15
17
19
21
Stations


Data values of tmin−m (Dec)
Values
10
5
0
−5
1
3
5
7
9
11
13
15
17
19
21
Stations


Histogram of all data
Frequency
0
200
400
600
800
−15
−10
−5
0
5
10
15
tmin−m

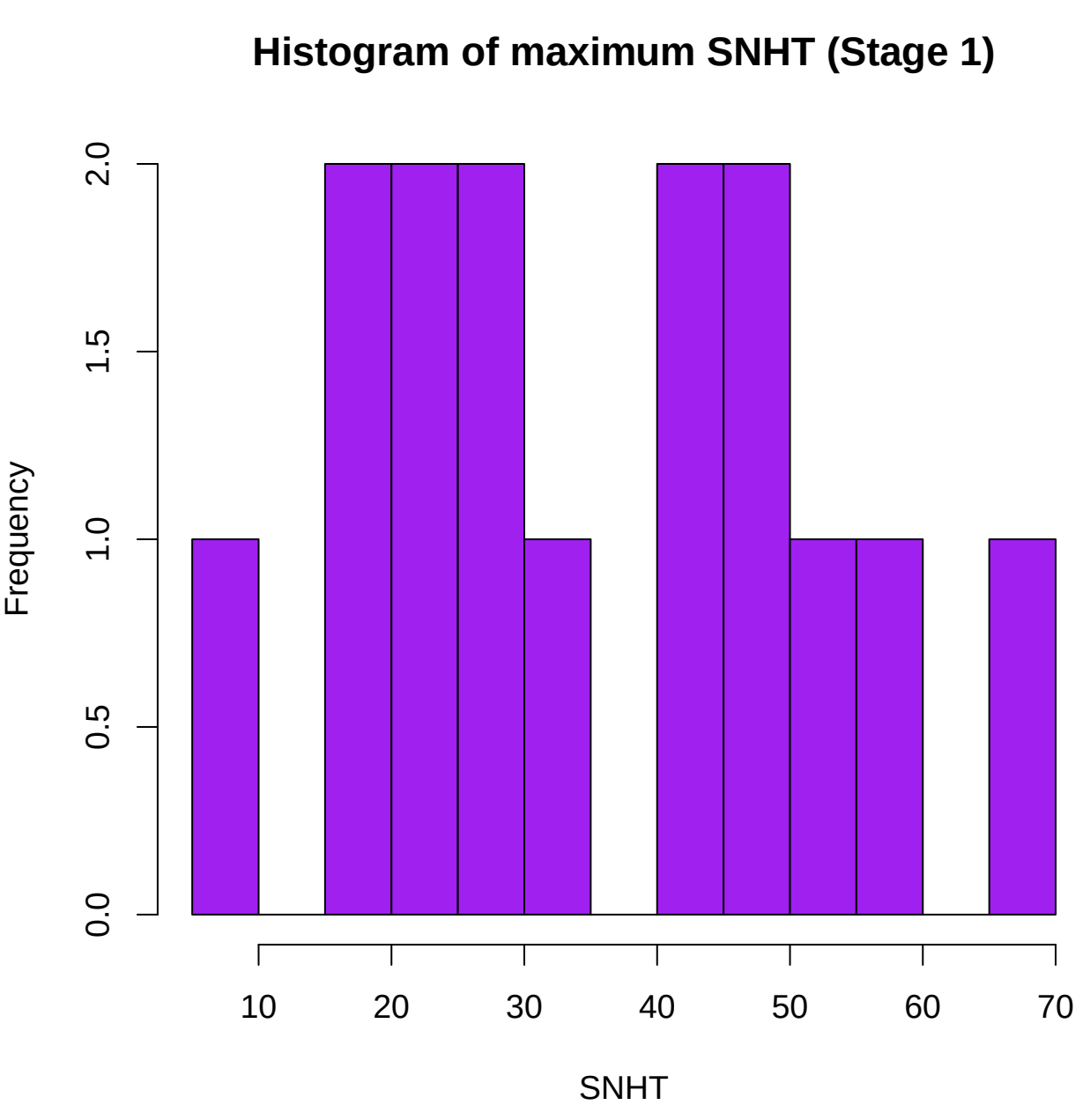

Correlogram of first difference series
Correlation coefficient
1.0
0.5
0.0
−0.5
0
50
100
150
200
250
300
350
Distance (km)


Dendrogram of station clusters
Dissimilarity
0.0
0.5
1.0
1.5
2.0
2.5
3.0
14
6
12
17
19
1
20
15
2
5
3
8
18
21
4
10
9
11
16
7
13
Stations


tmin−m station locations (2 clusters)
−17.0
−17.5
−18.0
−18.5
−19.0
−69.5
−69.0
−68.5
−68.0
−67.5
−67.0
21
18
20
19
17
9
12
4
1
5
7
14
15
6
3
8
2
16
13
11
10

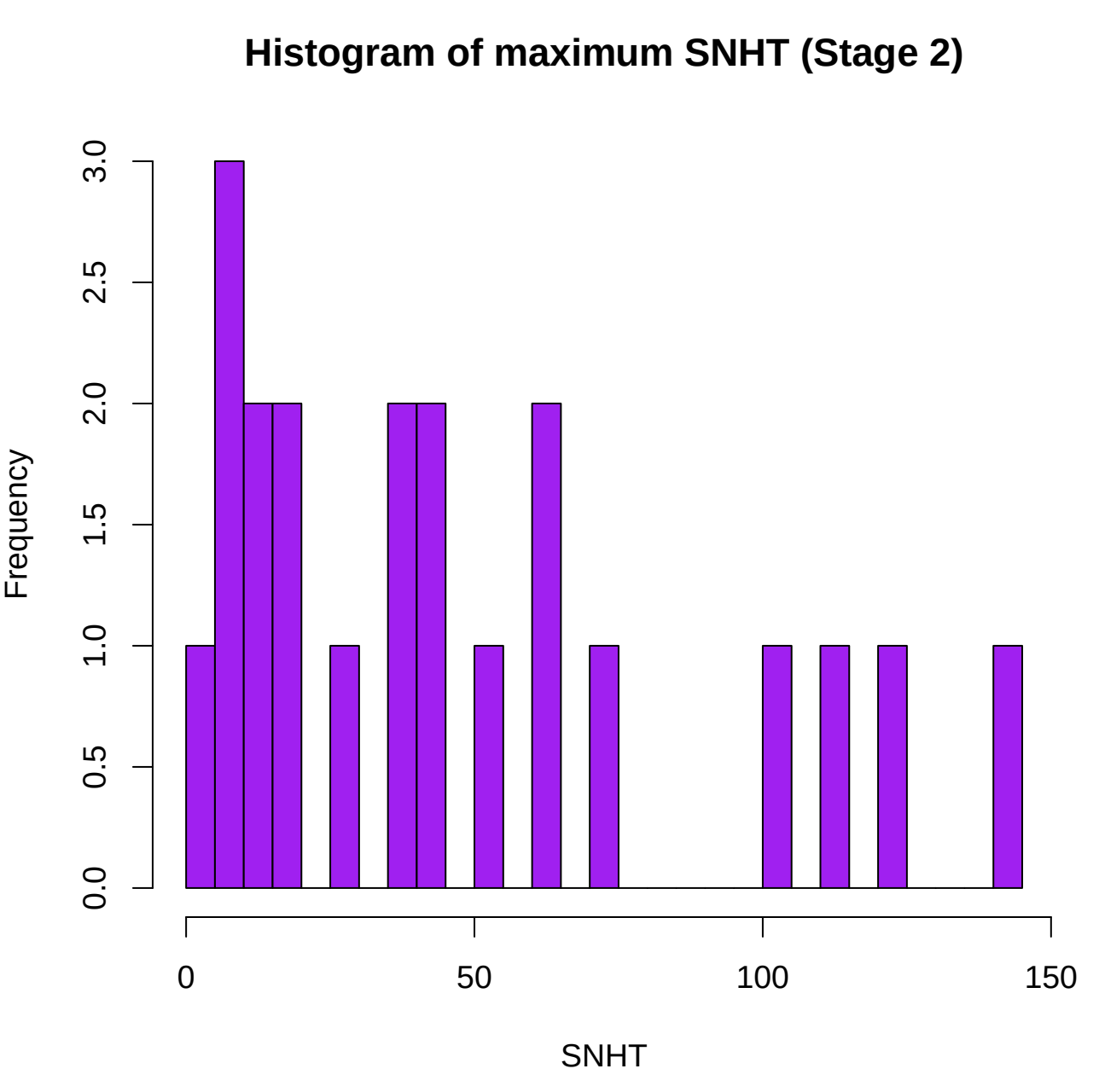
Stage 1

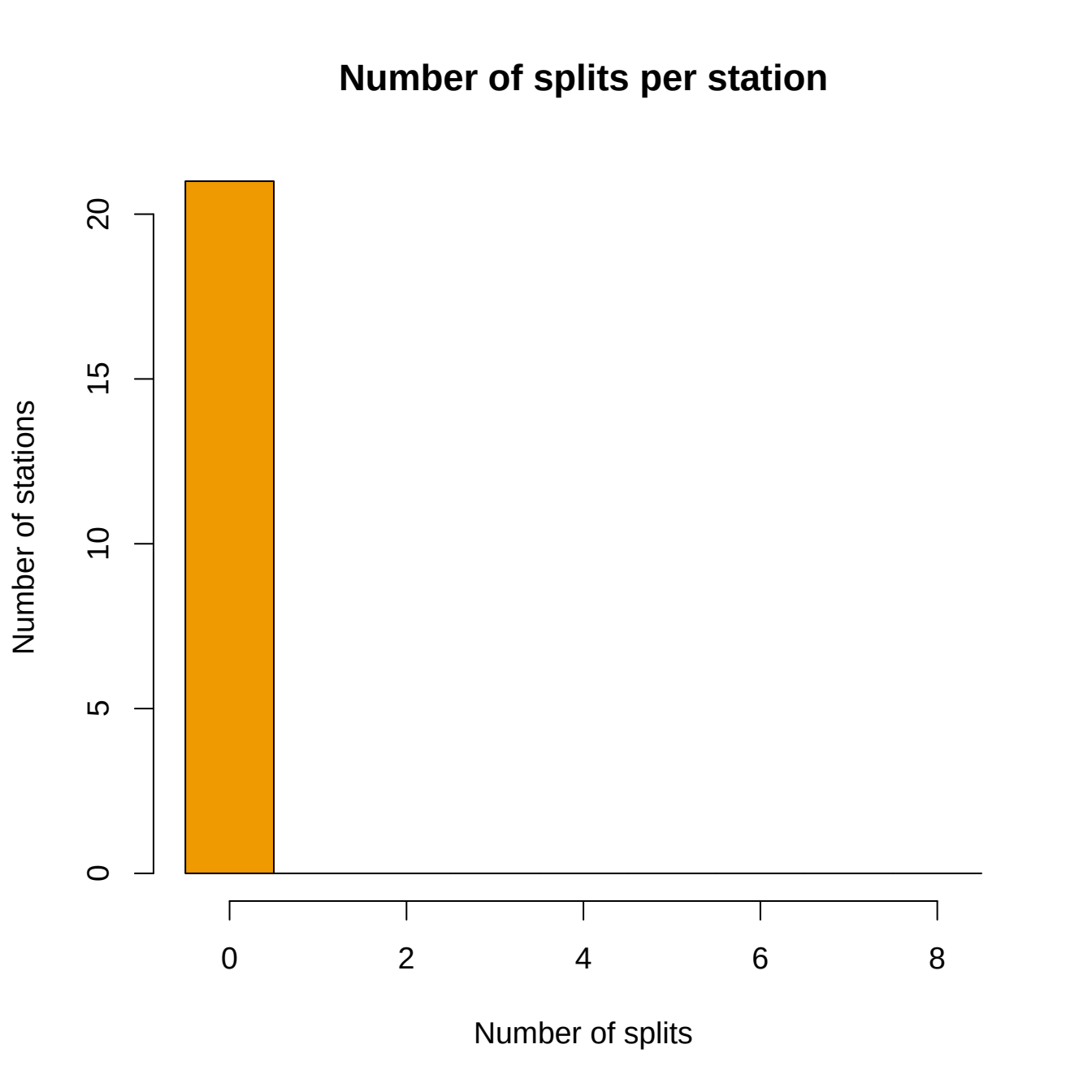
Binary splits on 60 term stepped windows with SNHT > 80 and wd = 0 km

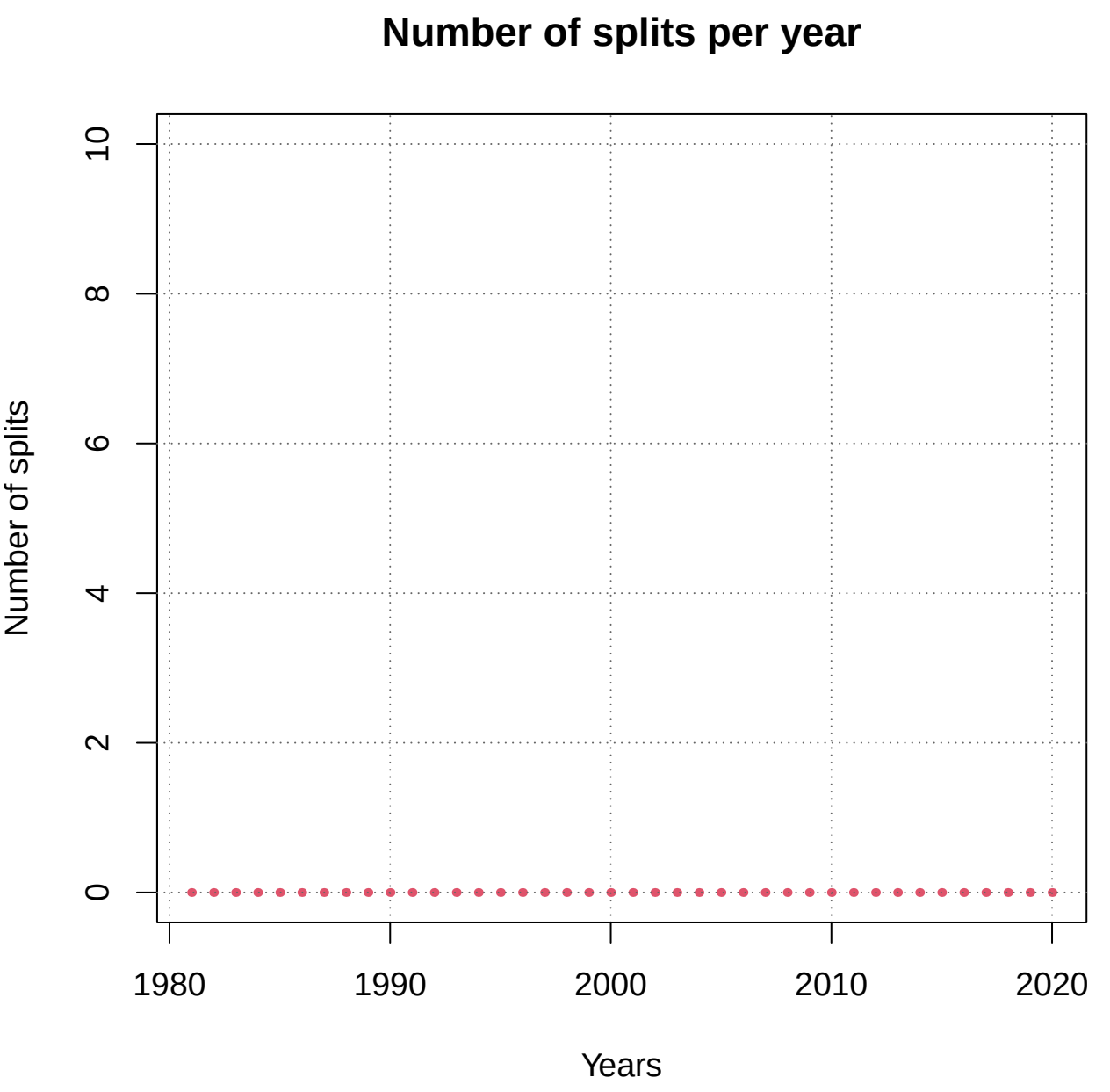

Histogram of maximum SNHT (Stage 1)
Frequency
0.0
0.5
1.0
1.5
2.0
10
20
30
40
50
60
70
SNHT

Stage 2

Binary splits on whole series with SNHT > 170 and wd = 0 km

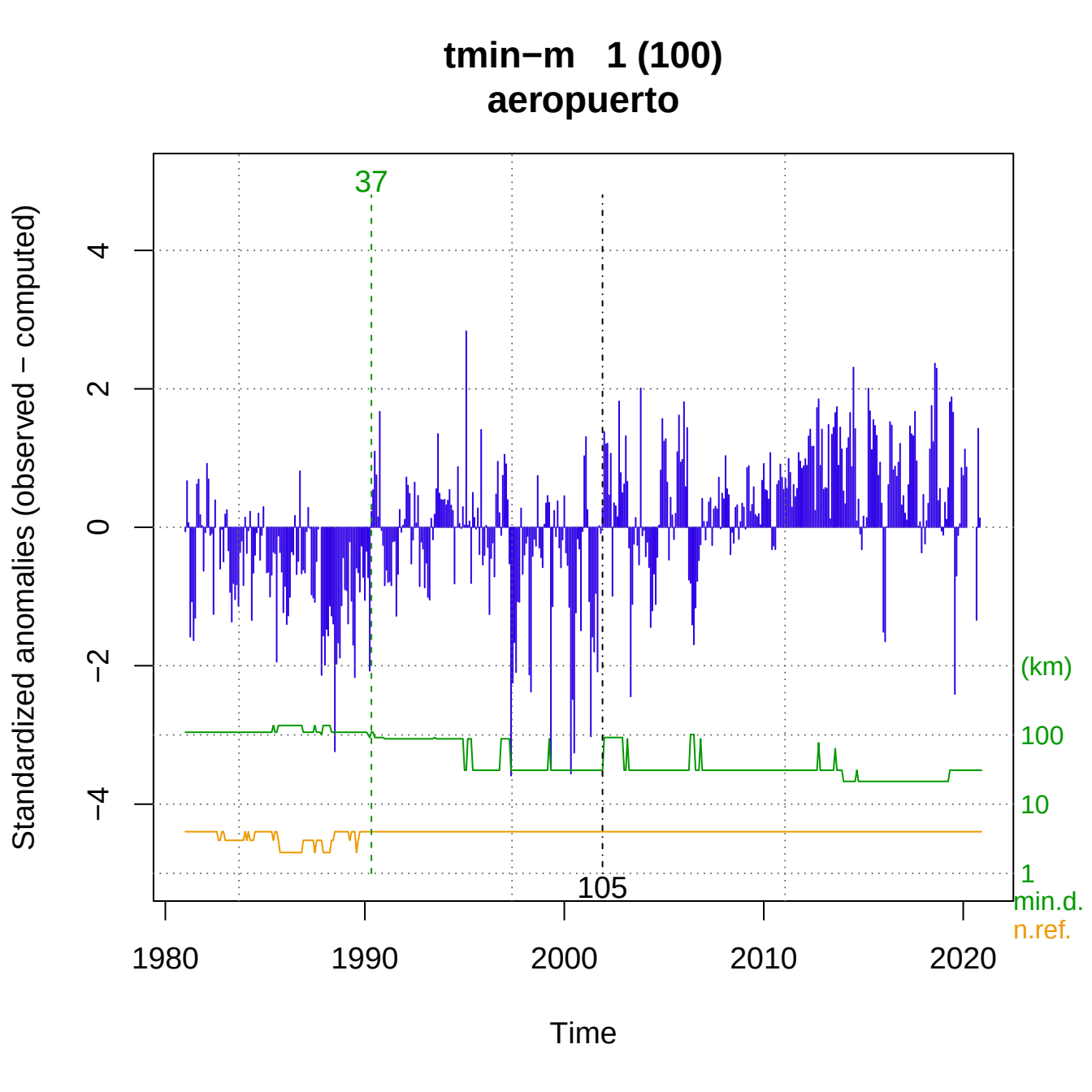

Histogram of maximum SNHT (Stage 2)
Frequency
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0
50
100
150
SNHT

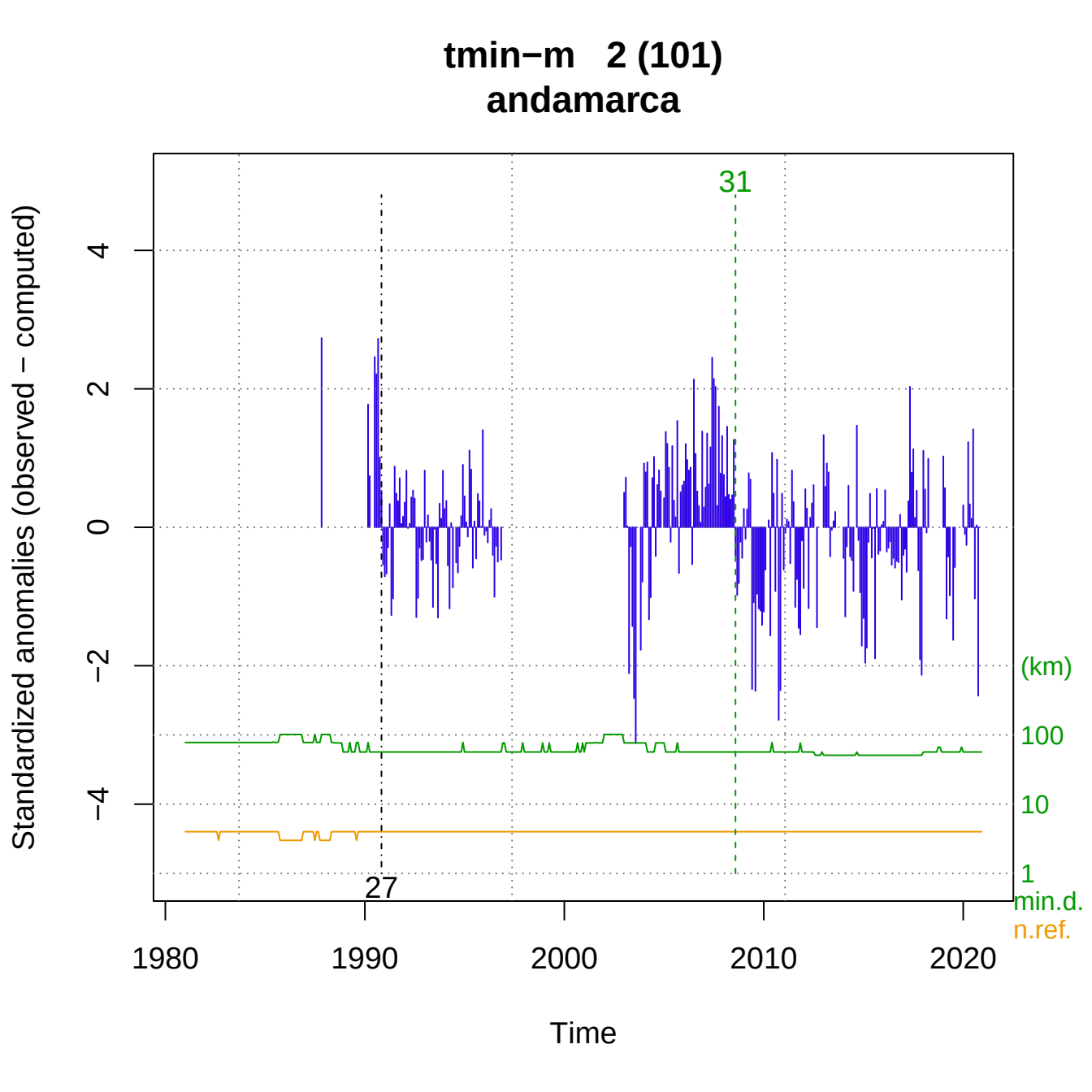

Number of splits per station
Number of stations
0
5
10
15
20
0
2
4
6
8
Number of splits

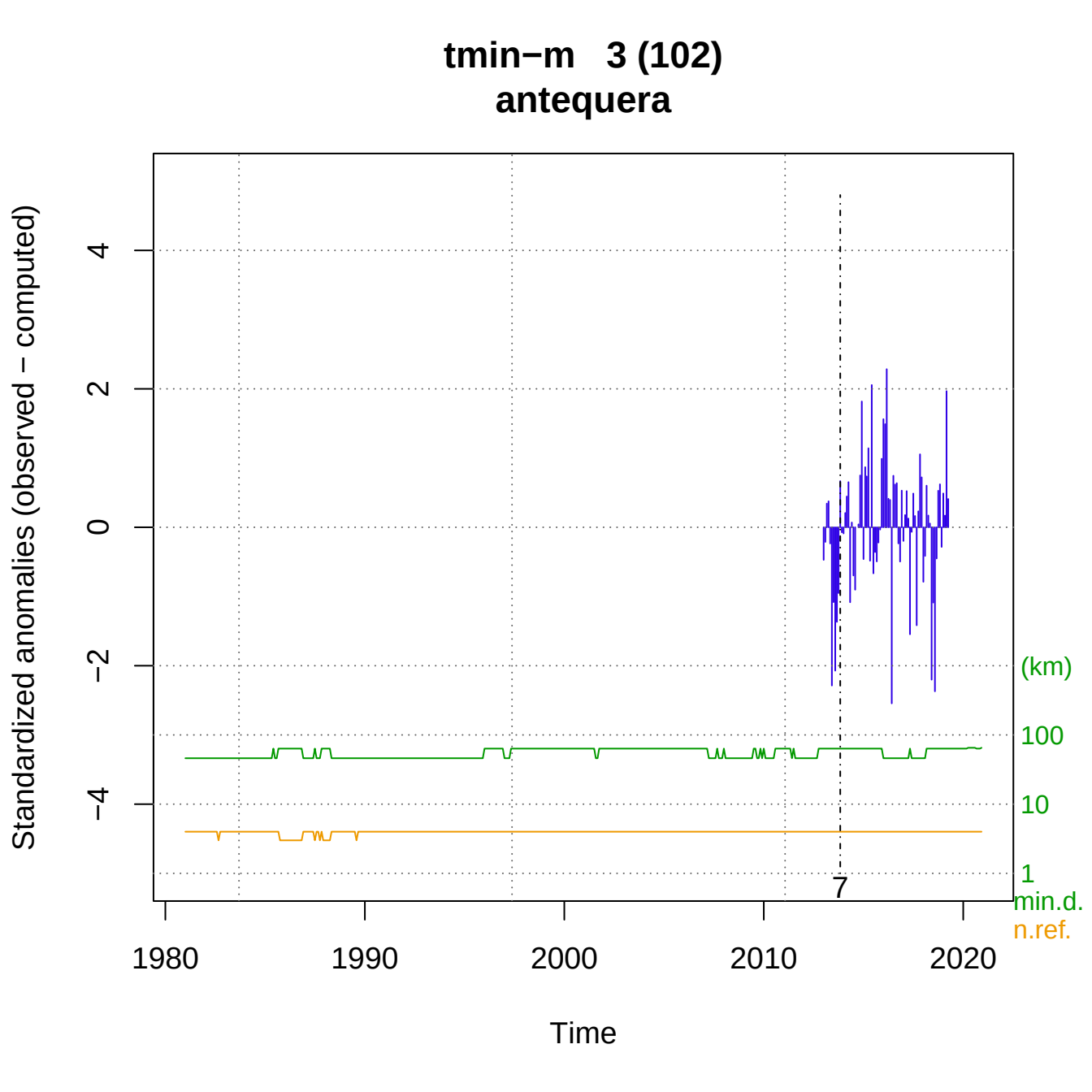

Number of splits per year
Number of splits
0
2
4
6
8
10
1980
1990
2000
2010
2020
Years

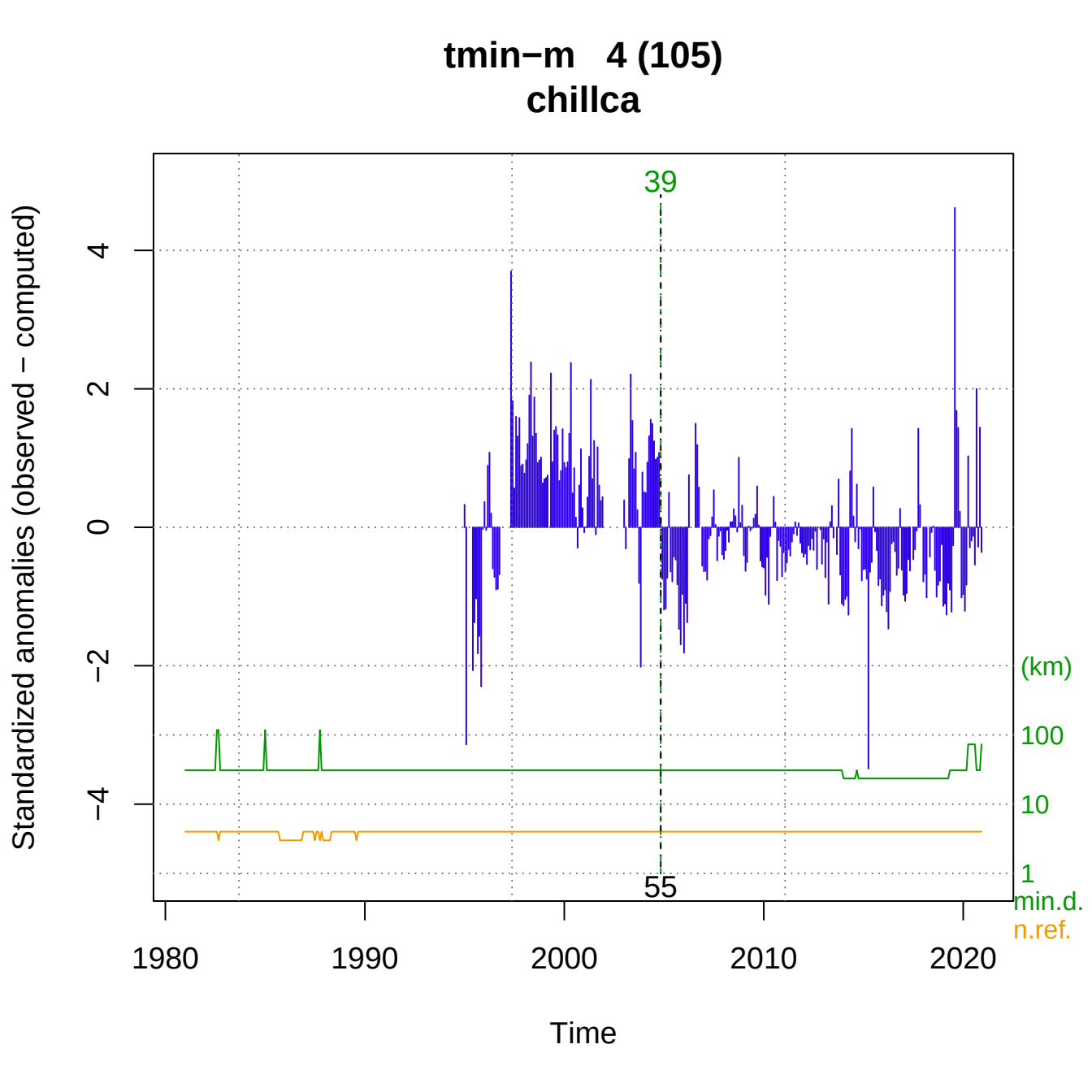
Stage 3

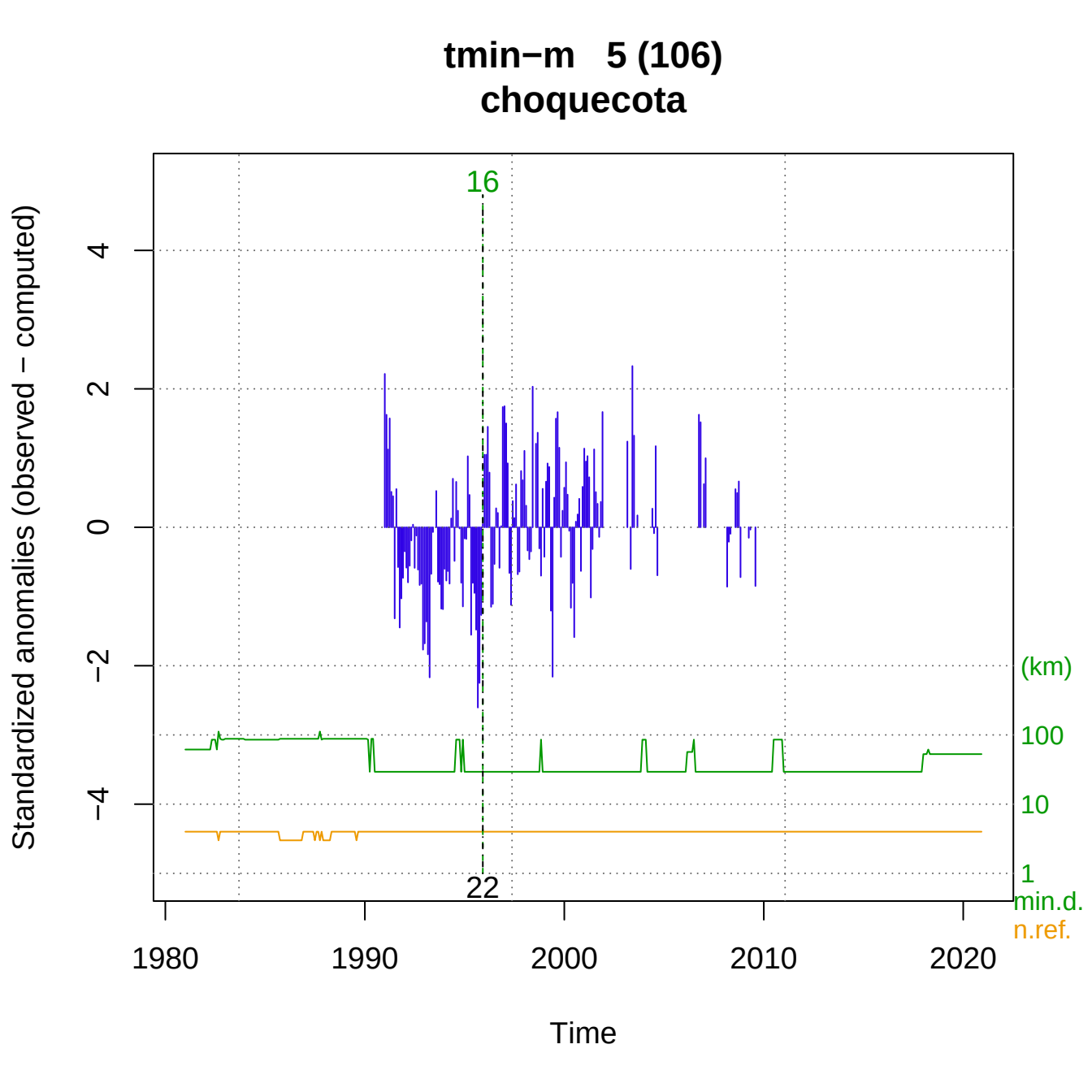
Anomalies after
missing data
recalculation
with wd = 100 km
(swa = 60)

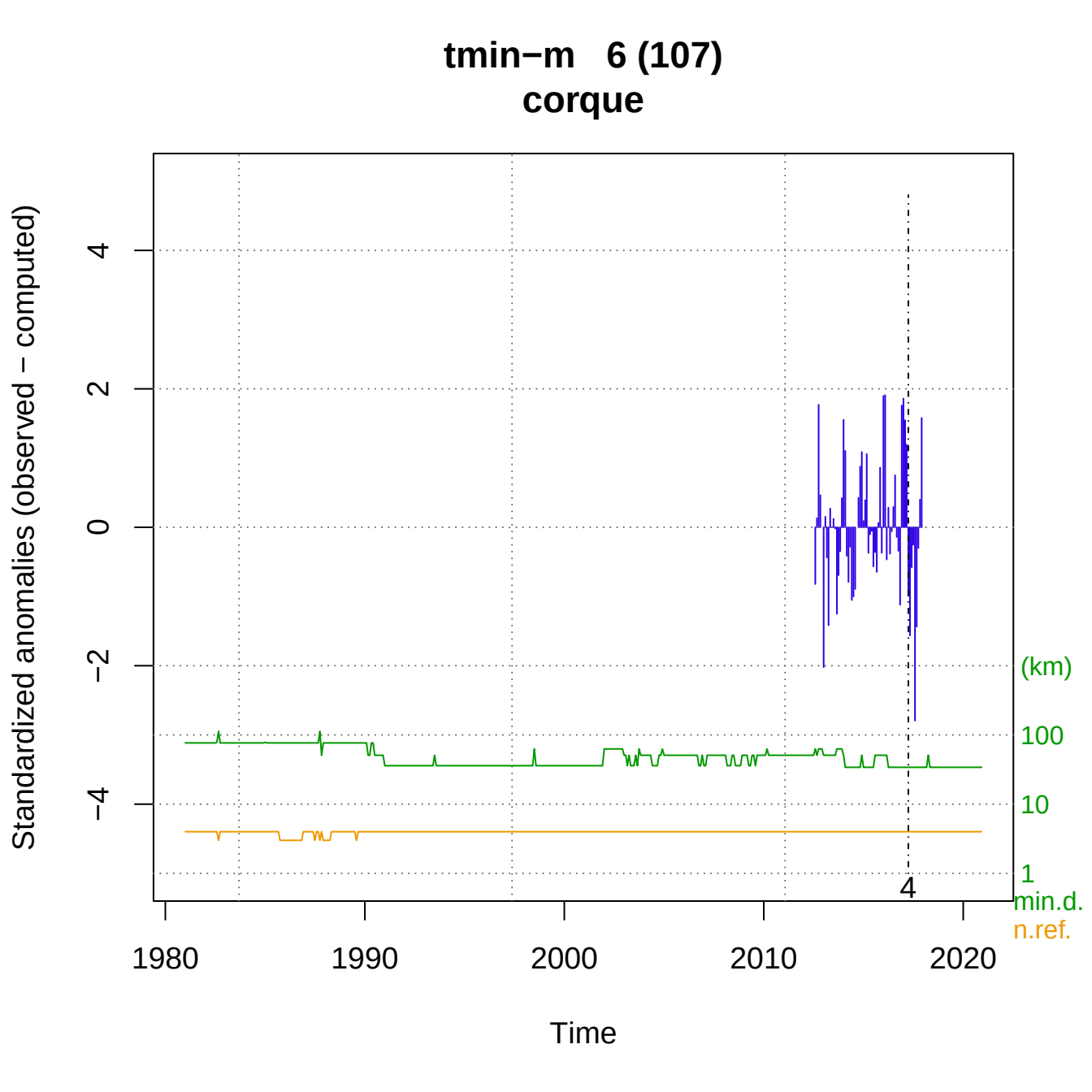

tmin−m 1 (100)
aeropuerto
37
105
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

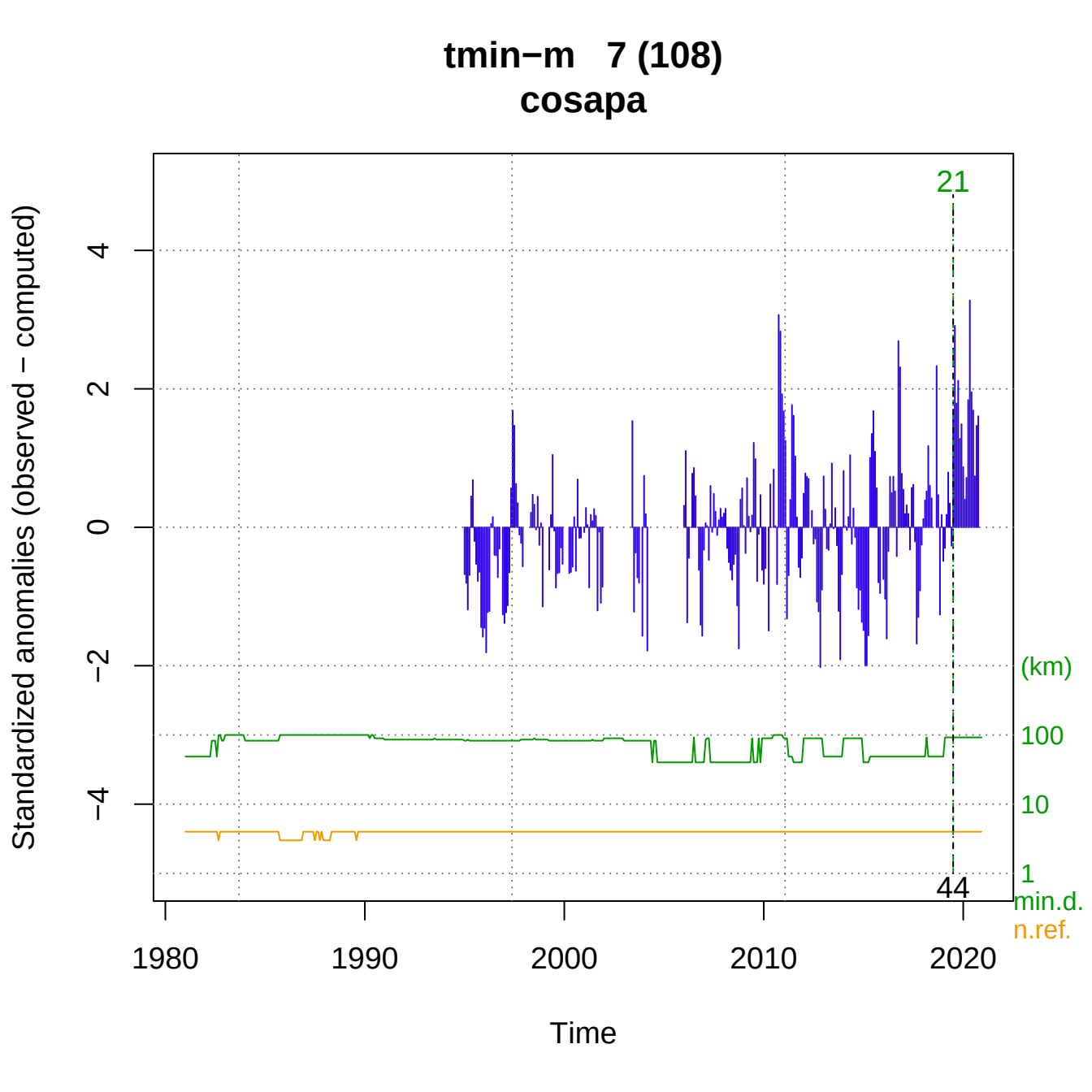

tmin−m 2 (101)
andamarca
31
27
Standardized anomalies (observed − computed)
4
2
0
−2
−4
(km)
100
10
1
min.d.
n.ref.
1980
1990
2000
2010
2020
Time

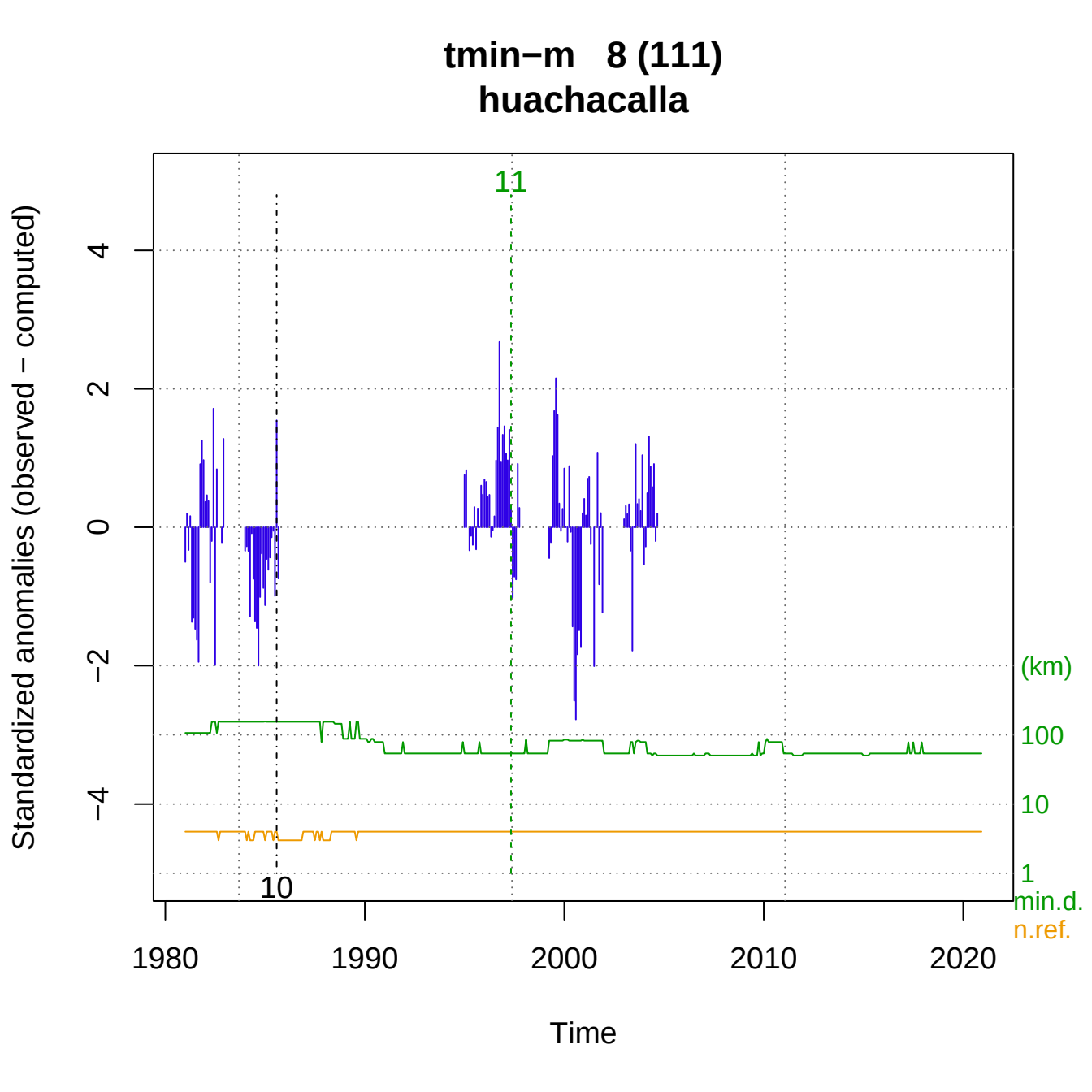

tmin−m 3 (102)
antequera
Standardized anomalies (observed − computed)
4
2
0
−2
−4
7
(km)
100
10
1
min.d.
n.ref.
1980
1990
2000
2010
2020
Time

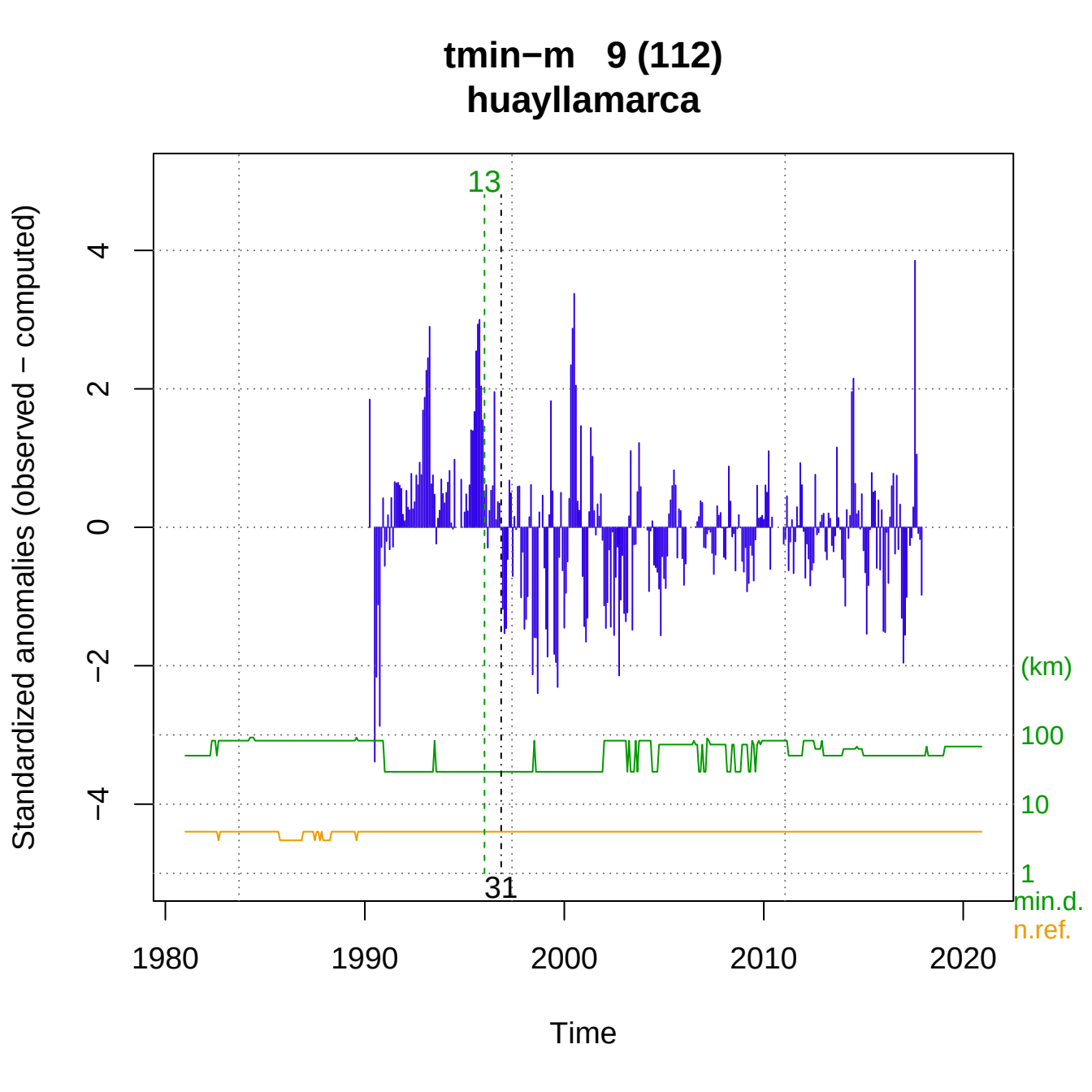

tmin−m 4 (105)
chillca
39
55
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

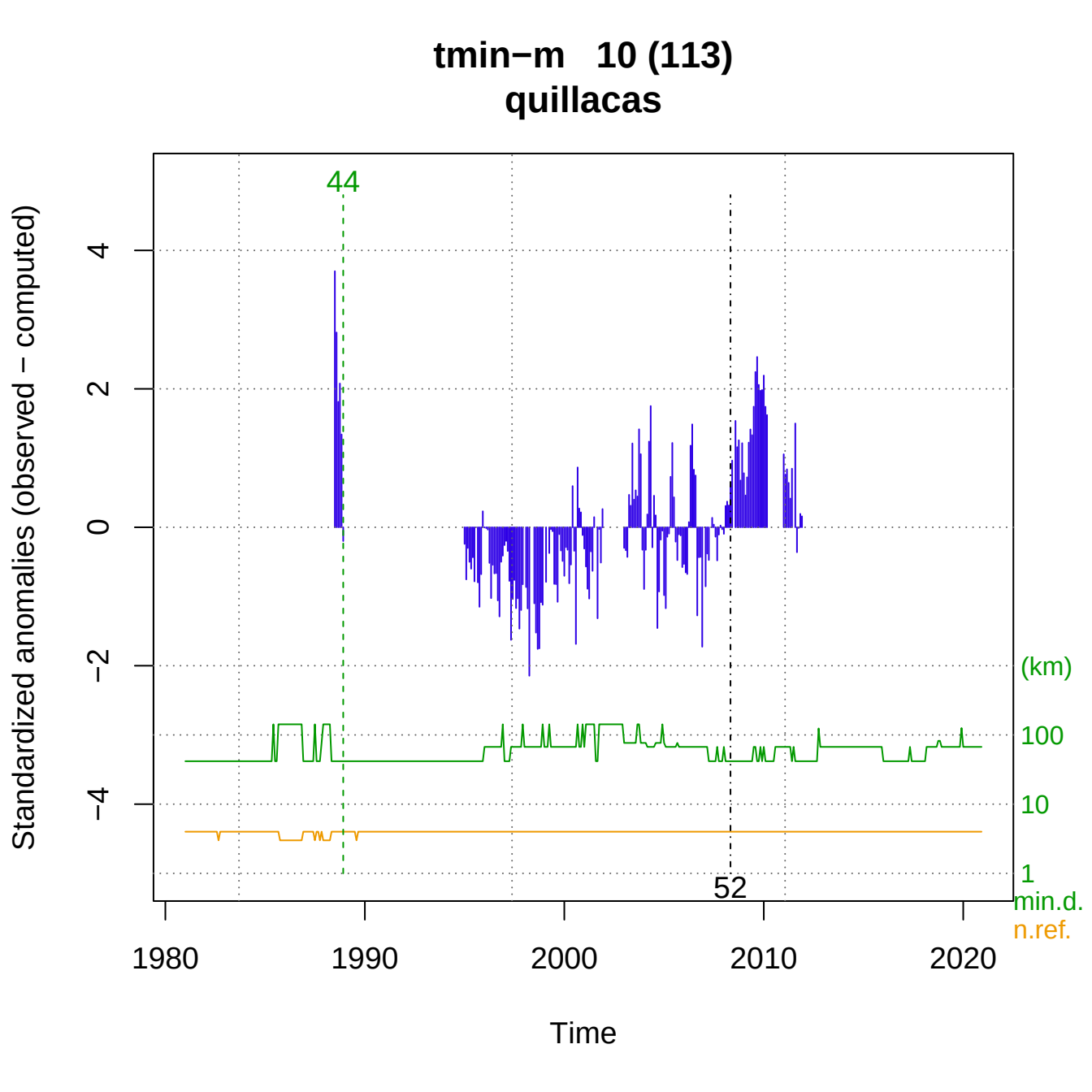

tmin−m 5 (106)
choquecota
16
22
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

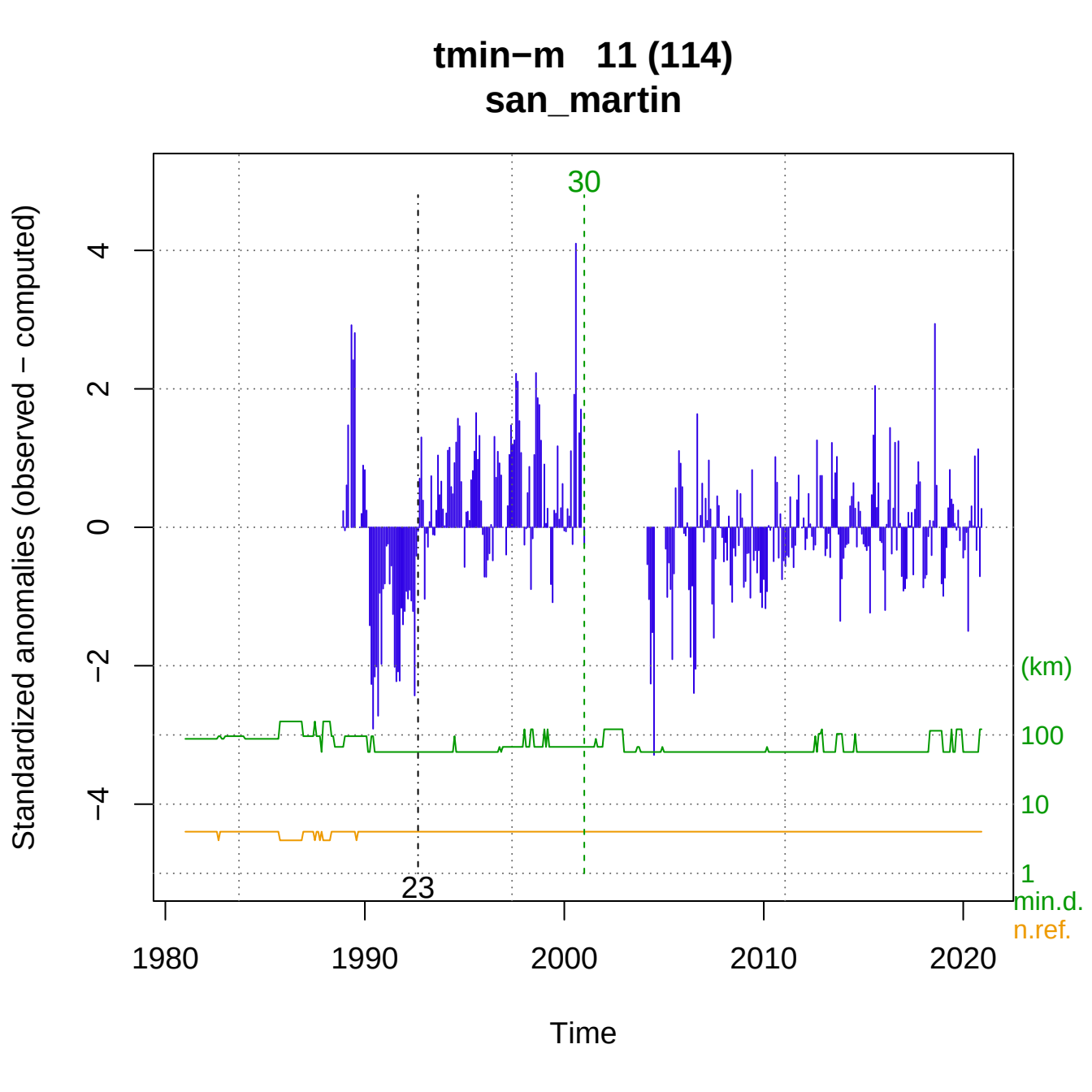

tmin−m 6 (107)
corque
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
4
(km)
100
10
1
min.d.
n.ref.

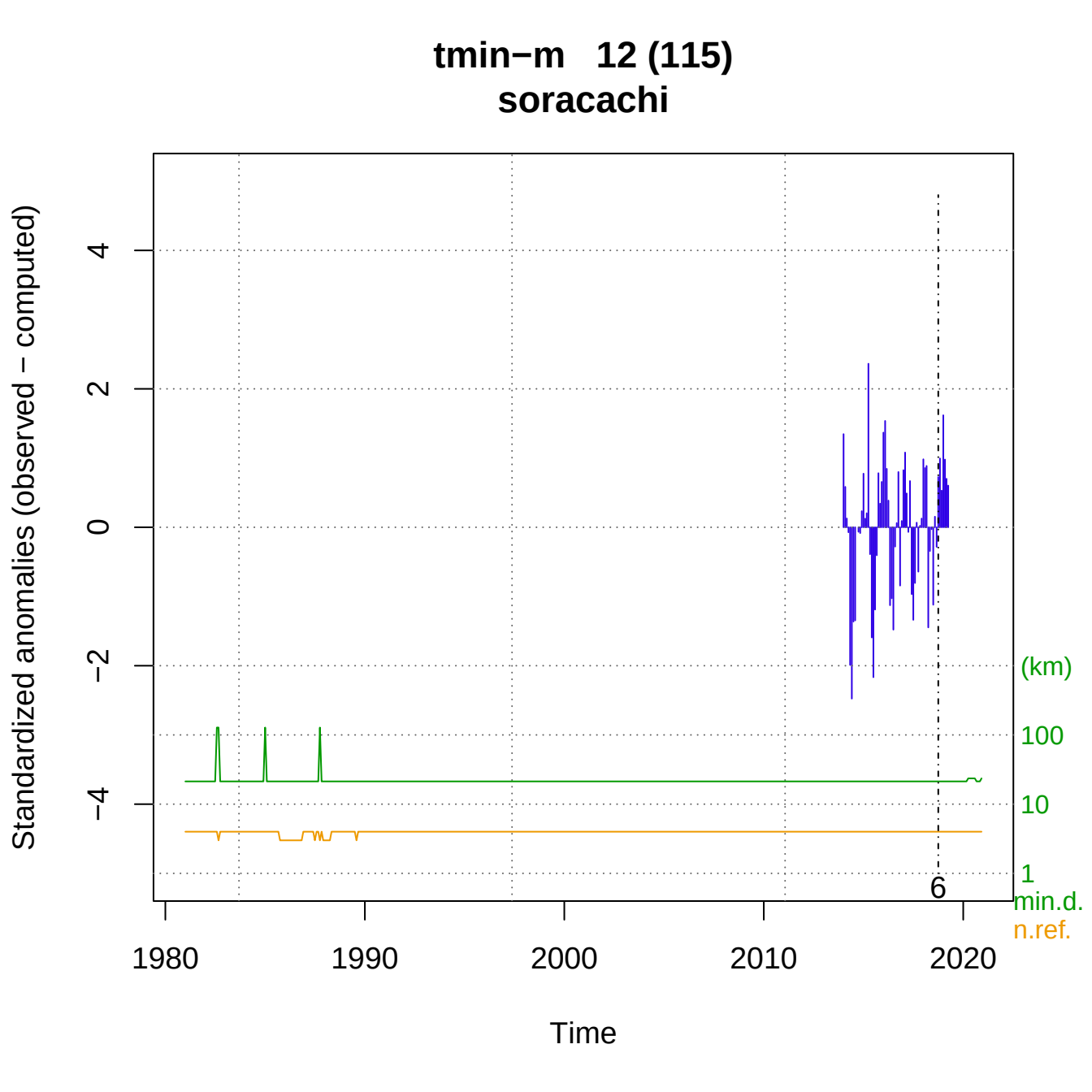

tmin−m 7 (108)
cosapa
Standardized anomalies (observed − computed)
4
2
0
−2
−4
21
44
(km)
100
10
1
min.d.
n.ref.
1980
1990
2000
2010
2020
Time

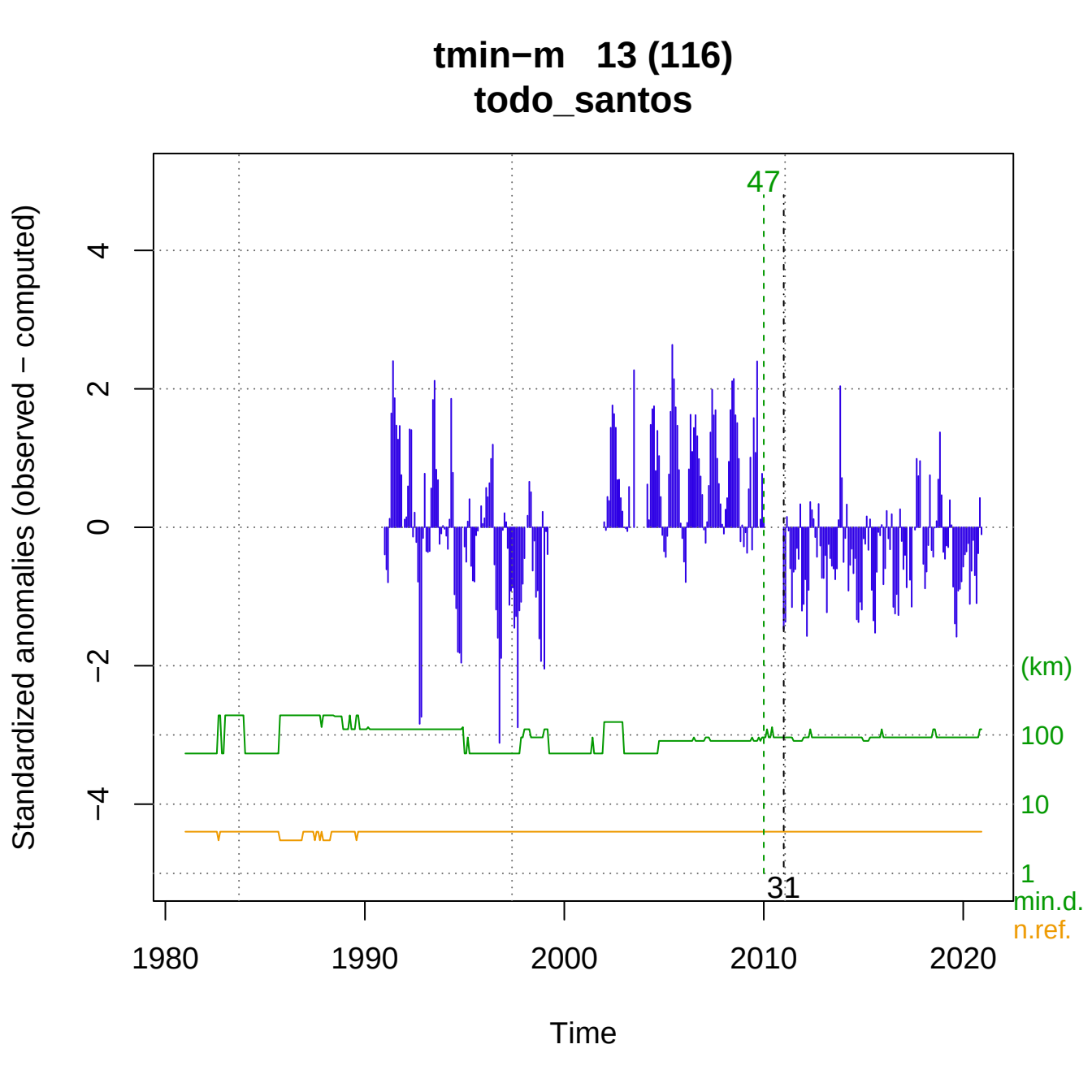

tmin−m 8 (111)
huachacalla
11
10
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

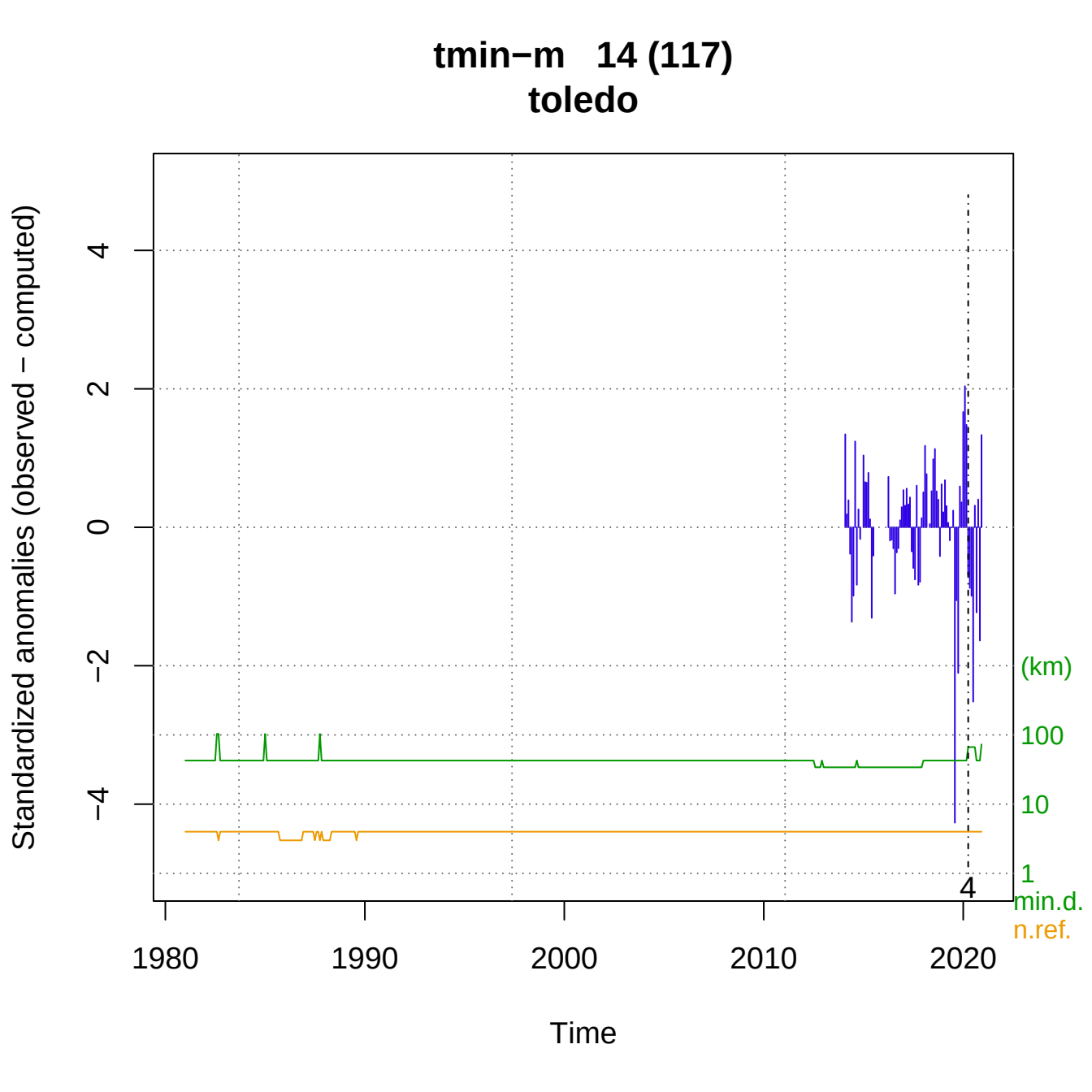

tmin−m 9 (112)
huayllamarca
13
31
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

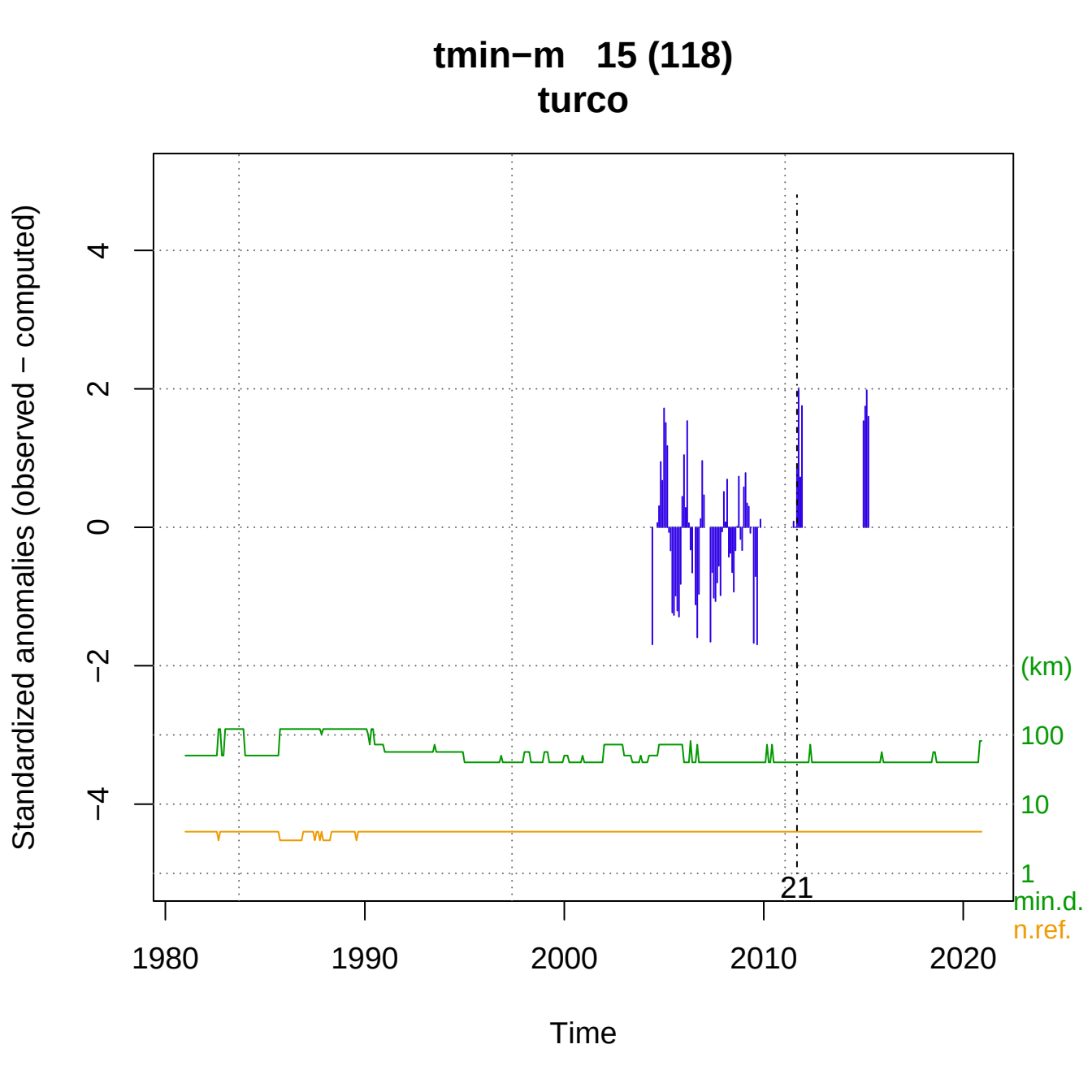

tmin−m 10 (113)
quillacas
44
52
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

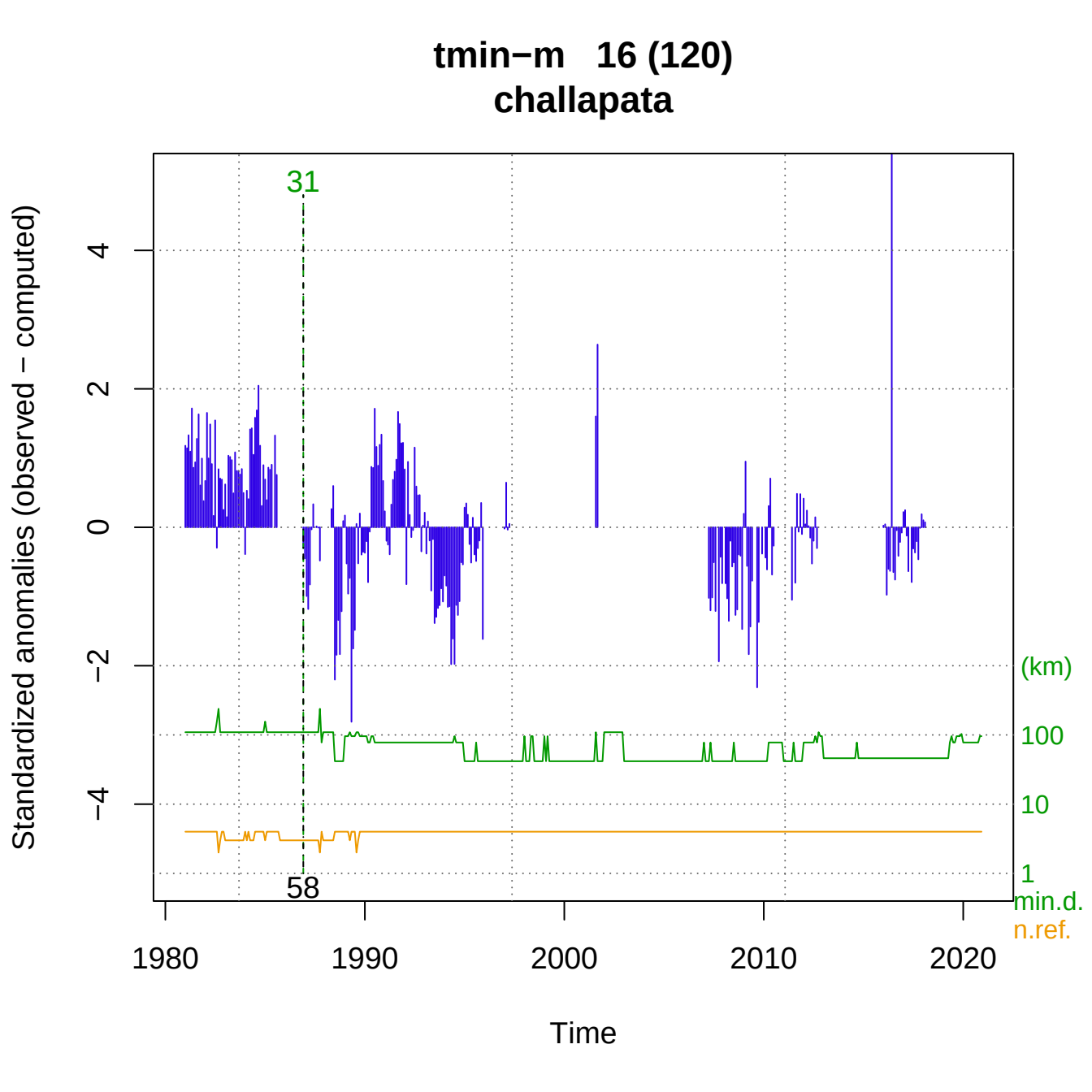

tmin−m 11 (114)
san_martin
30
23
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

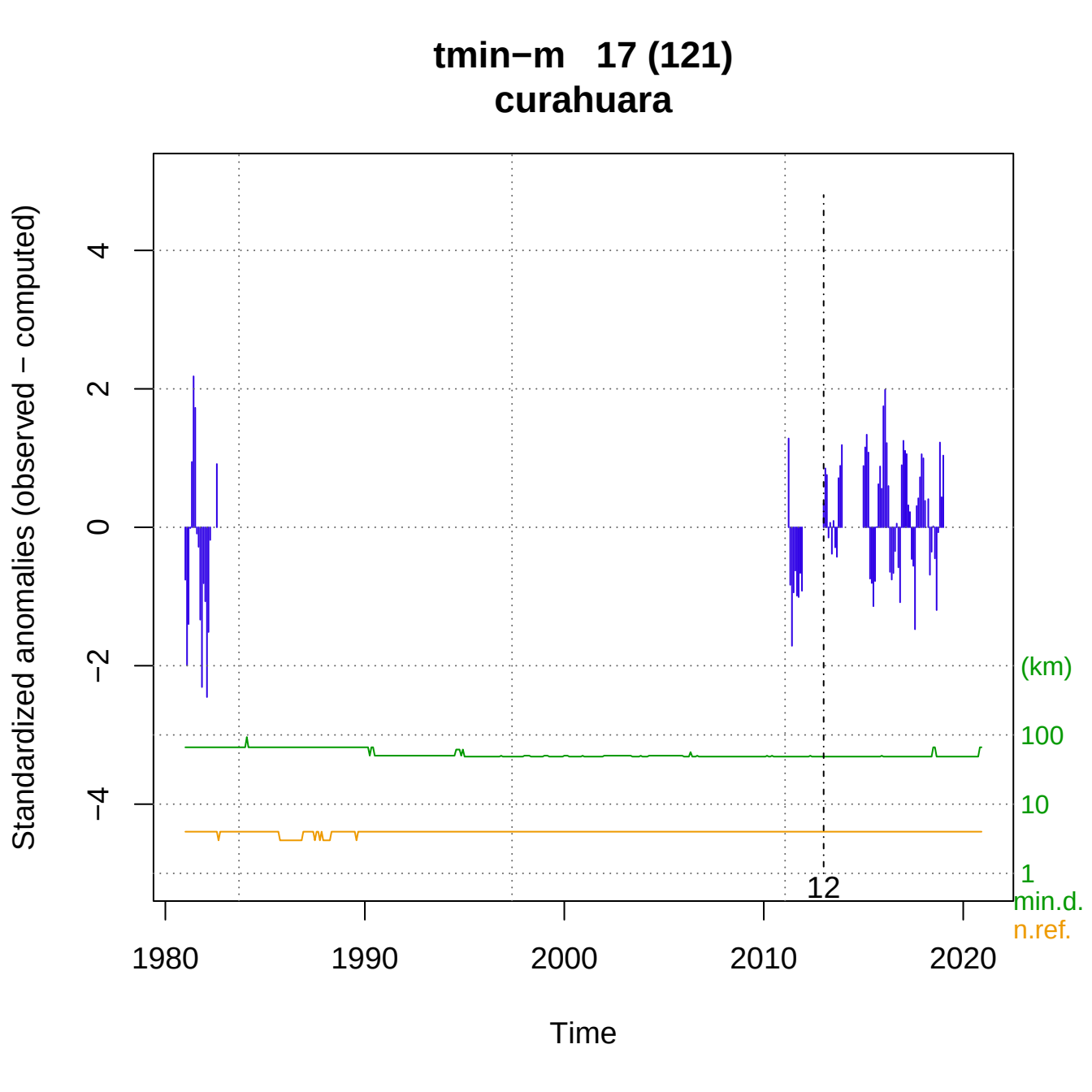

tmin−m 12 (115)
soracachi
Standardized anomalies (observed − computed)
4
2
0
−2
−4
(km)
100
10
1
min.d.
n.ref.
6
1980
1990
2000
2010
2020
Time

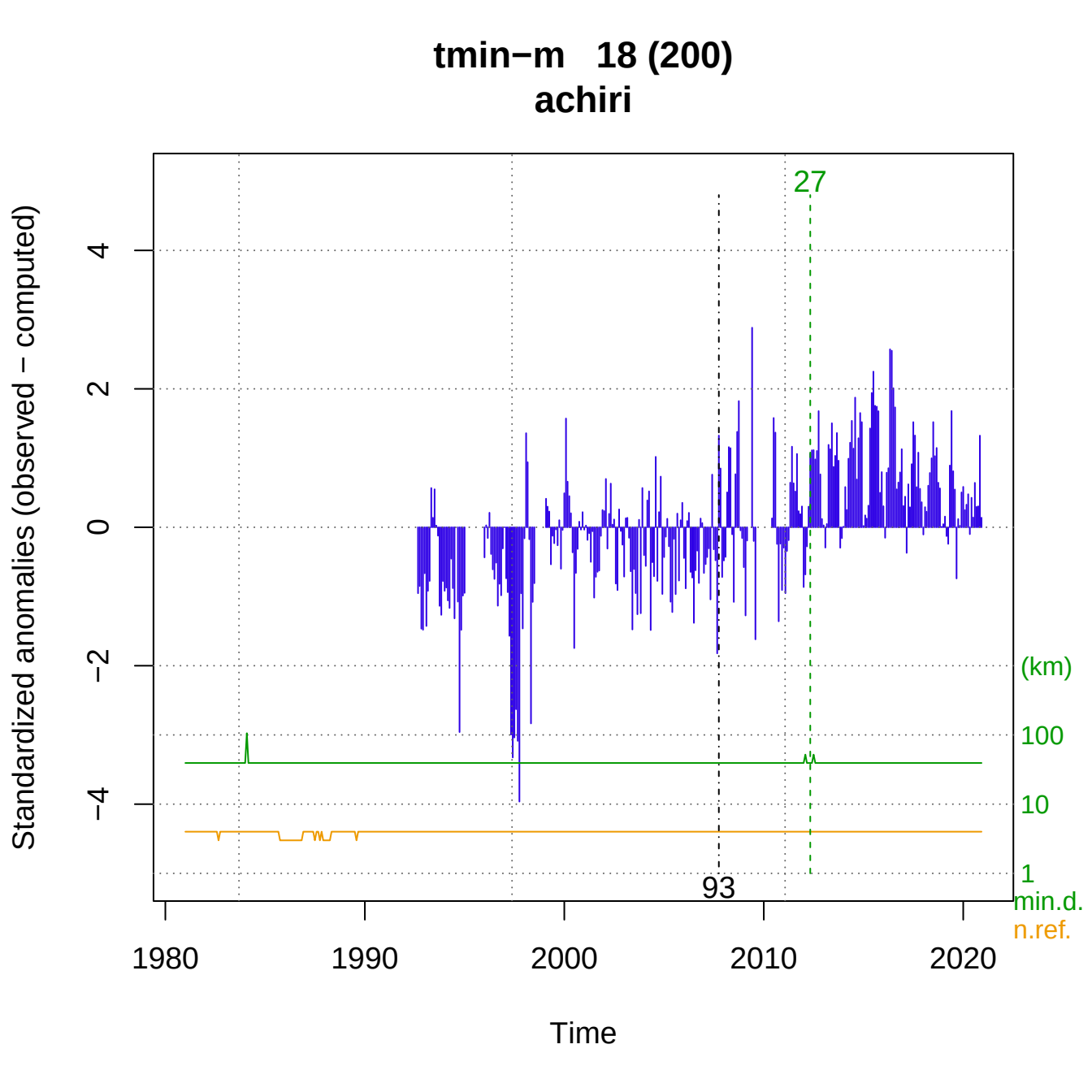

tmin−m 13 (116)
todo_santos
Standardized anomalies (observed − computed)
4
2
0
−2
−4
47
31
(km)
100
10
1
min.d.
n.ref.
1980
1990
2000
2010
2020
Time

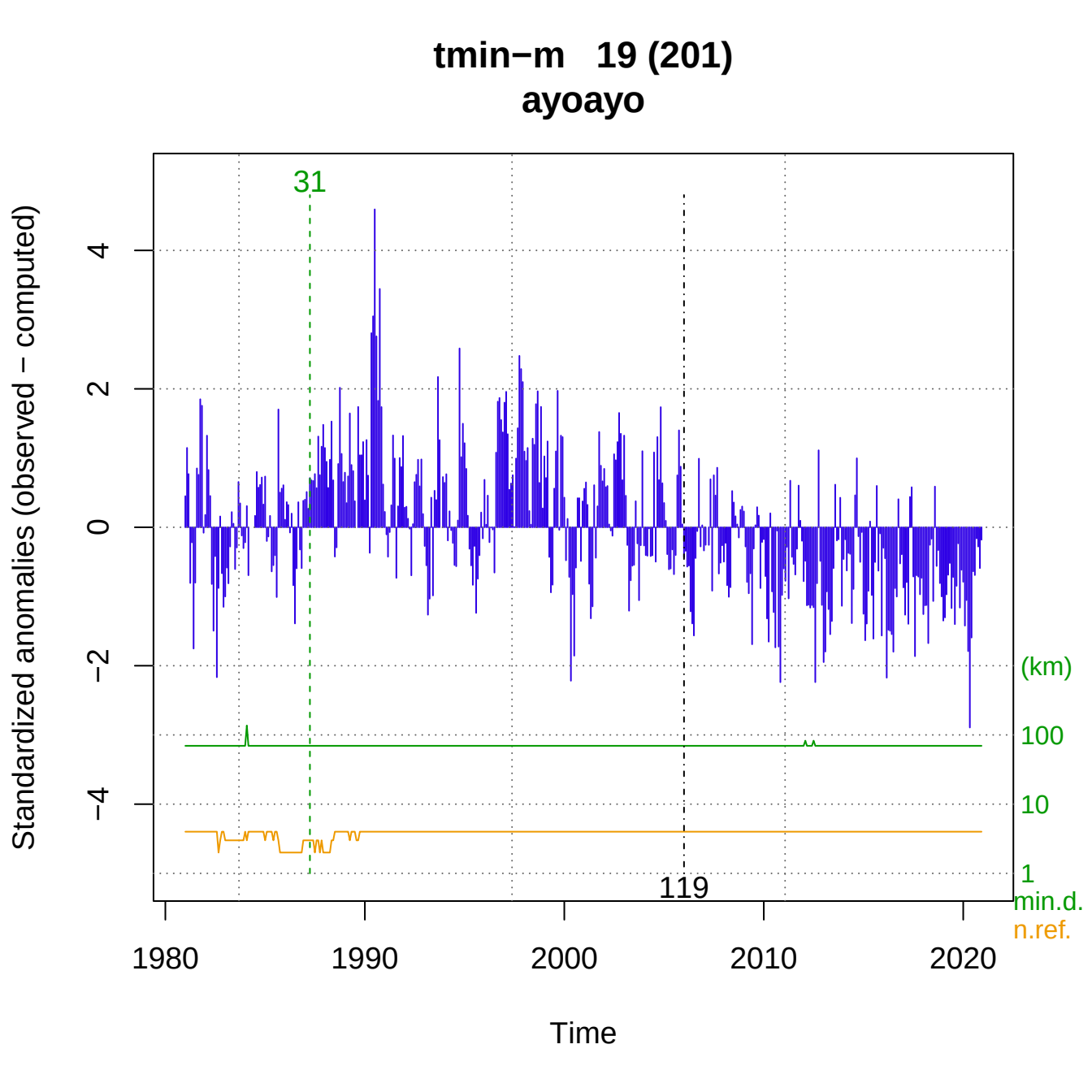

tmin−m 14 (117)
toledo
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
4
(km)
100
10
1
min.d.
n.ref.

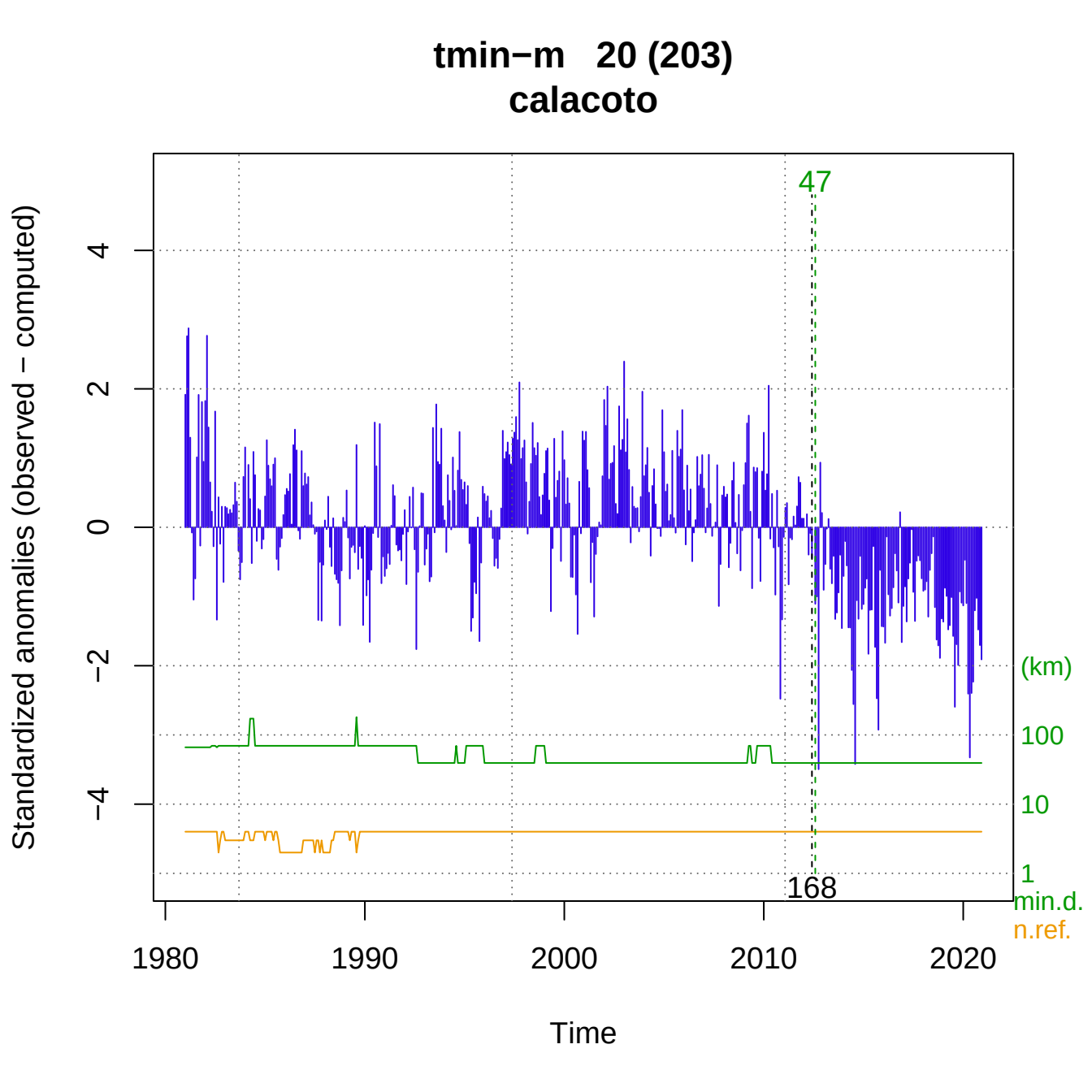

tmin−m 15 (118)
turco
Standardized anomalies (observed − computed)
4
2
0
−2
−4
(km)
100
10
1
min.d.
n.ref.
21
1980
1990
2000
2010
2020
Time

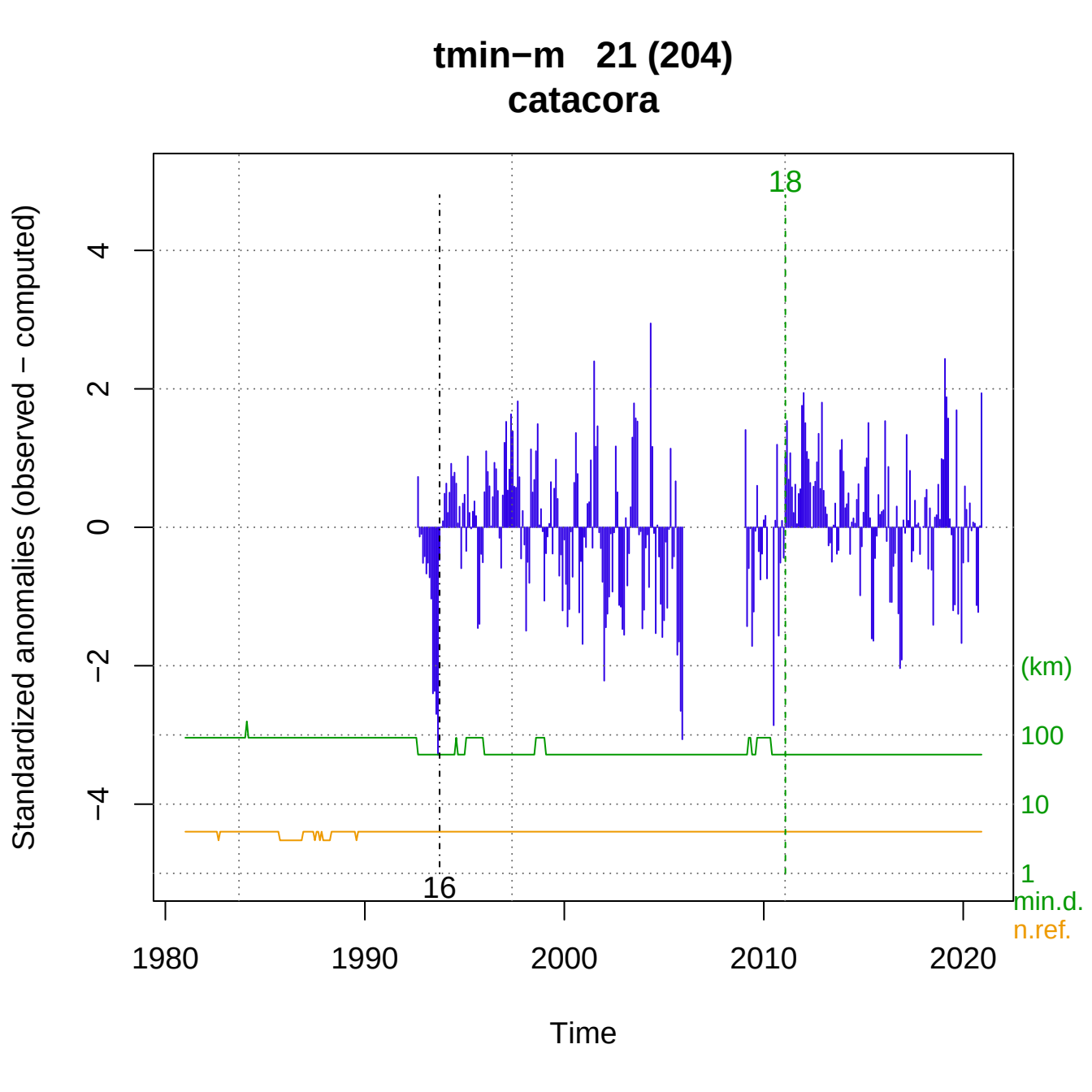

tmin−m 16 (120)
challapata
31
58
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.


tmin−m 17 (121)
curahuara
Standardized anomalies (observed − computed)
4
2
0
−2
−4
(km)
100
10
1
min.d.
n.ref.
12
1980
1990
2000
2010
2020
Time


tmin−m 18 (200)
achiri
Standardized anomalies (observed − computed)
4
2
0
−2
−4
27
93
(km)
100
10
1
min.d.
n.ref.
1980
1990
2000
2010
2020
Time

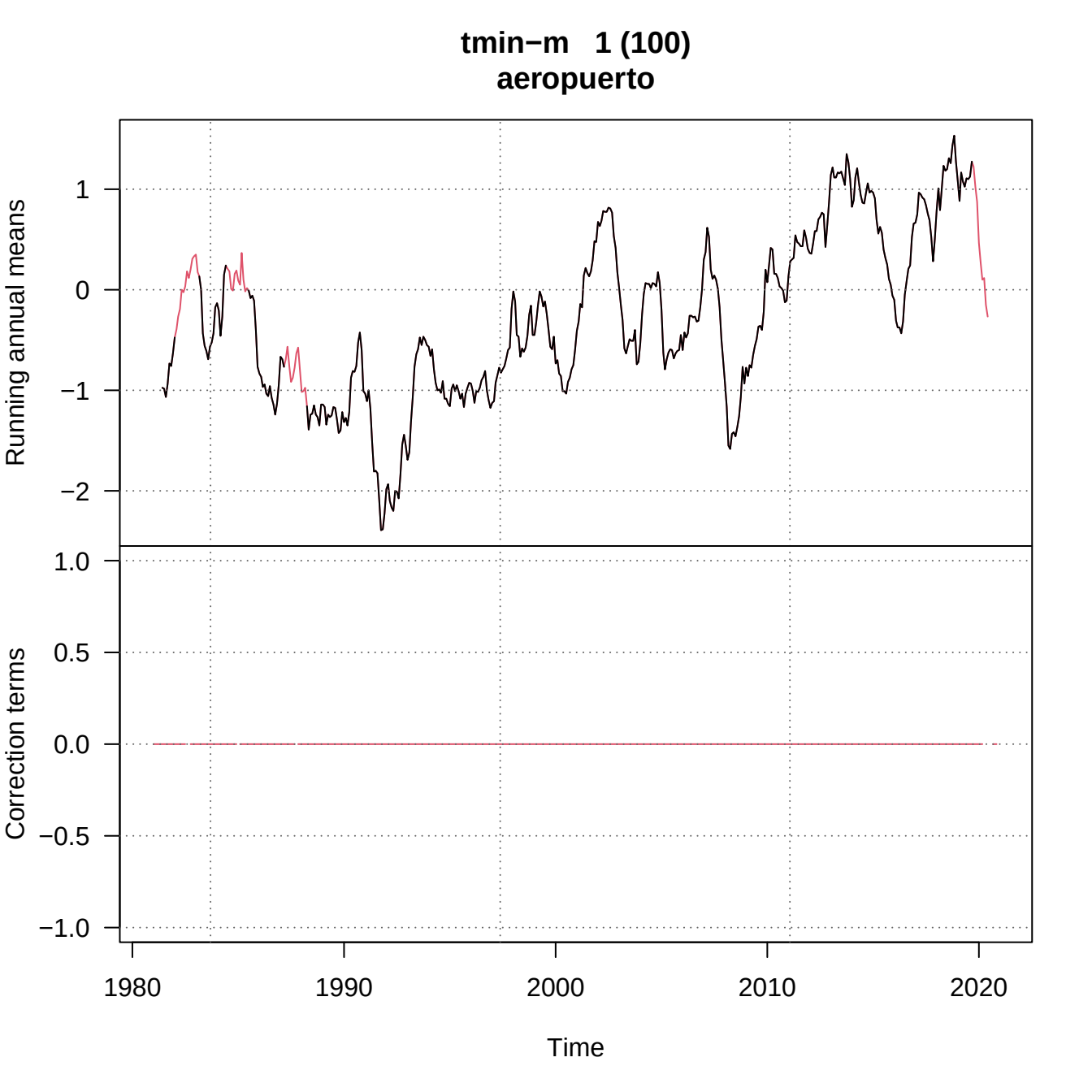

tmin−m 19 (201)
ayoayo
31
119
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

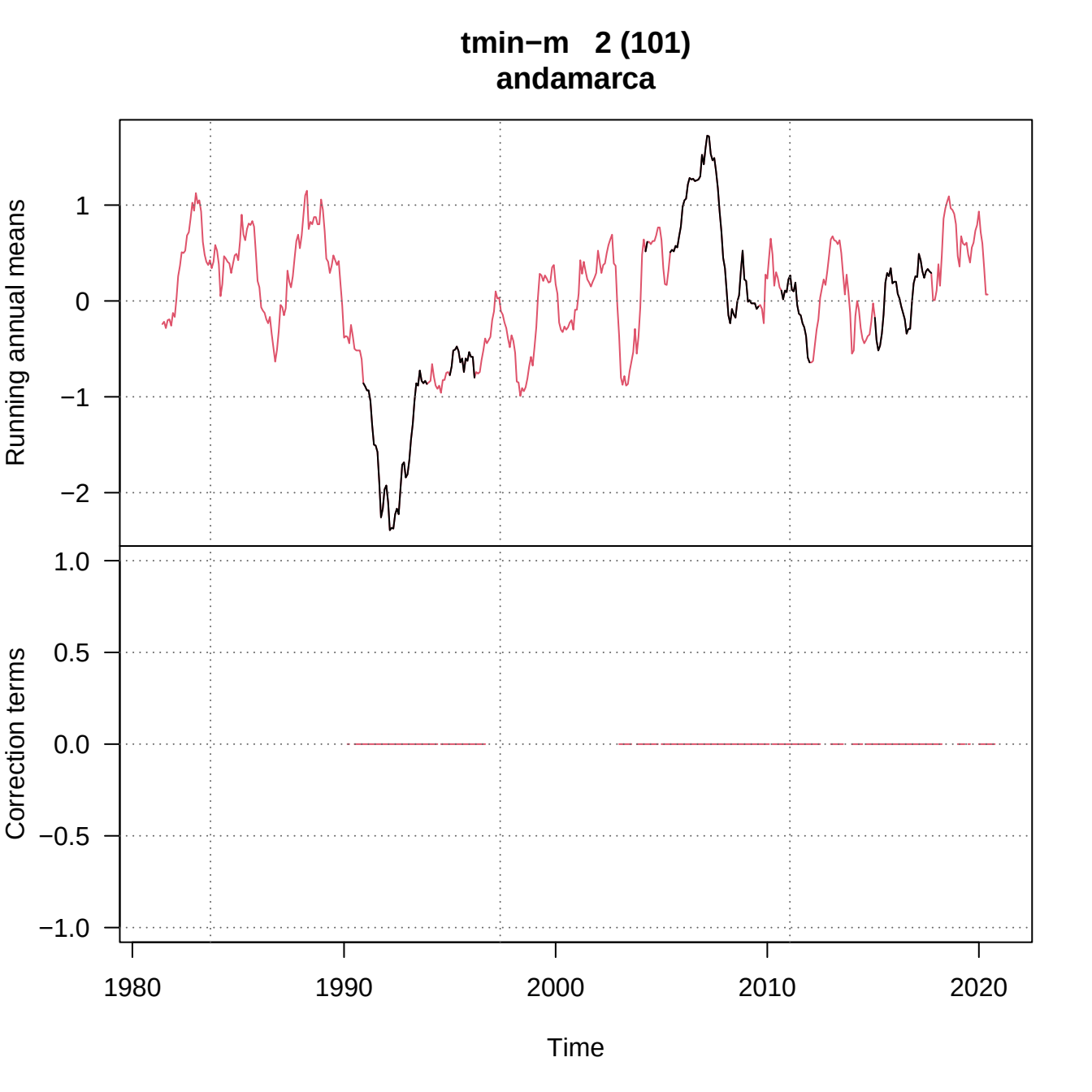

tmin−m 20 (203)
calacoto
47
168
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

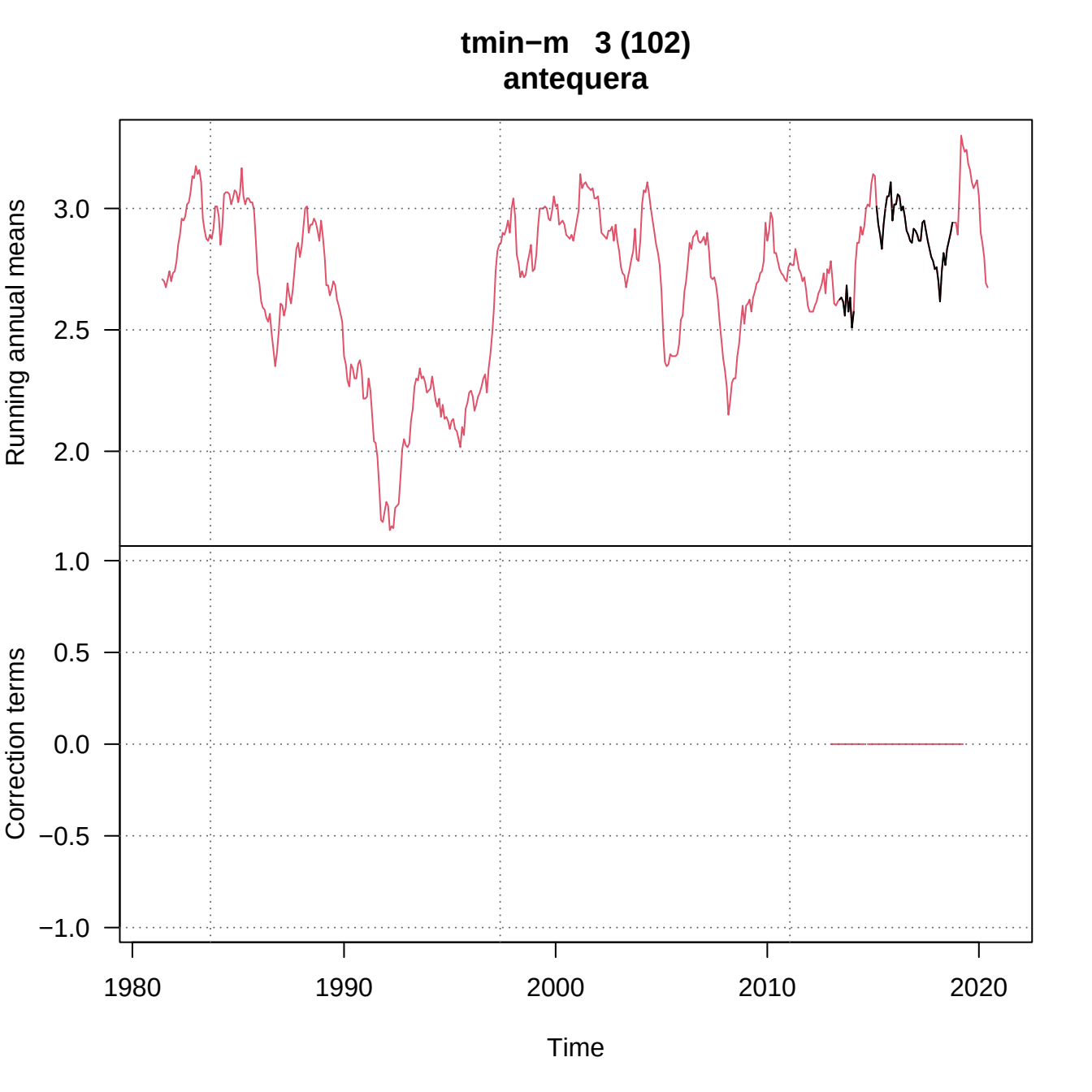

tmin−m 21 (204)
catacora
18
16
Standardized anomalies (observed − computed)
4
2
0
−2
−4
1980
1990
2000
2010
2020
Time
(km)
100
10
1
min.d.
n.ref.

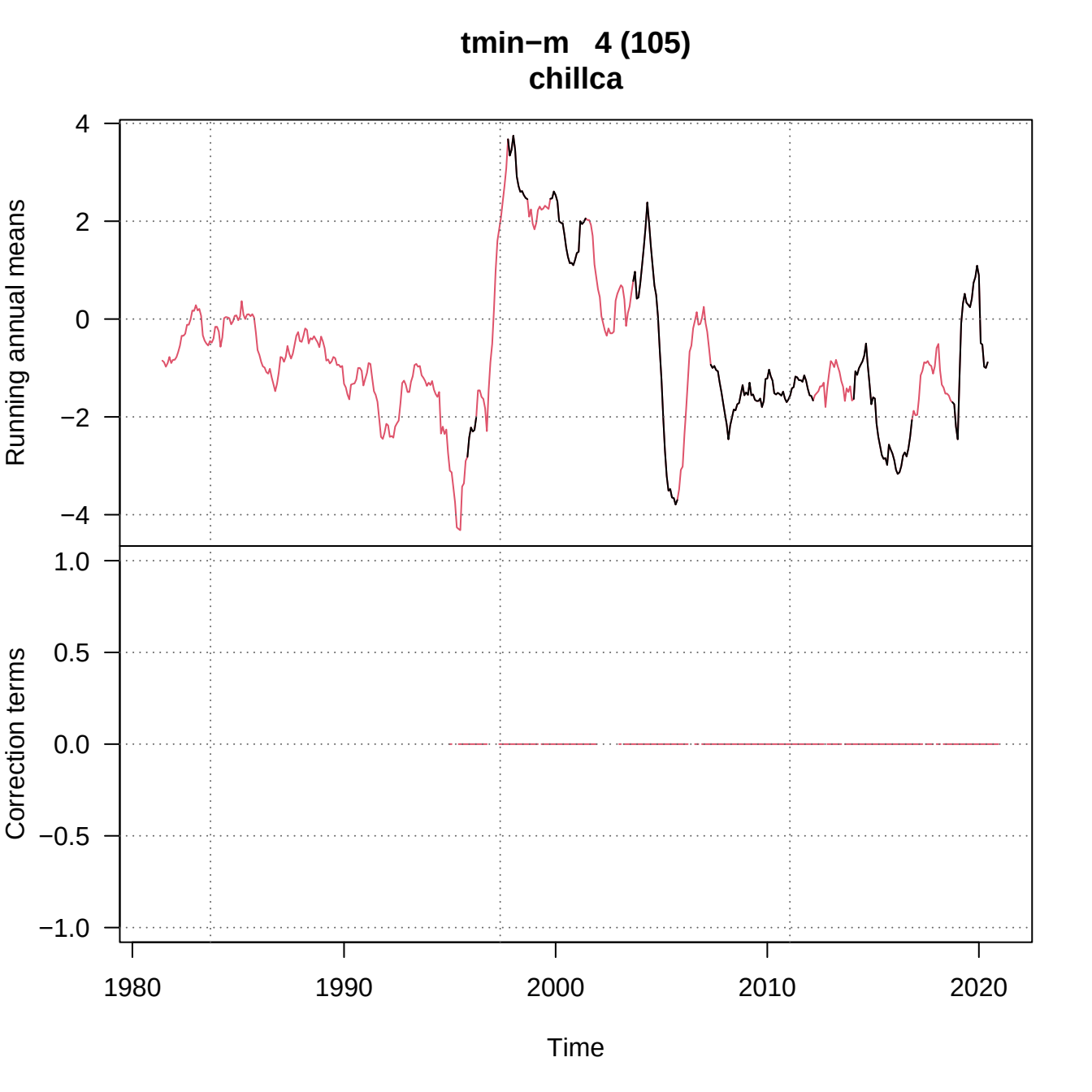
Final graphics

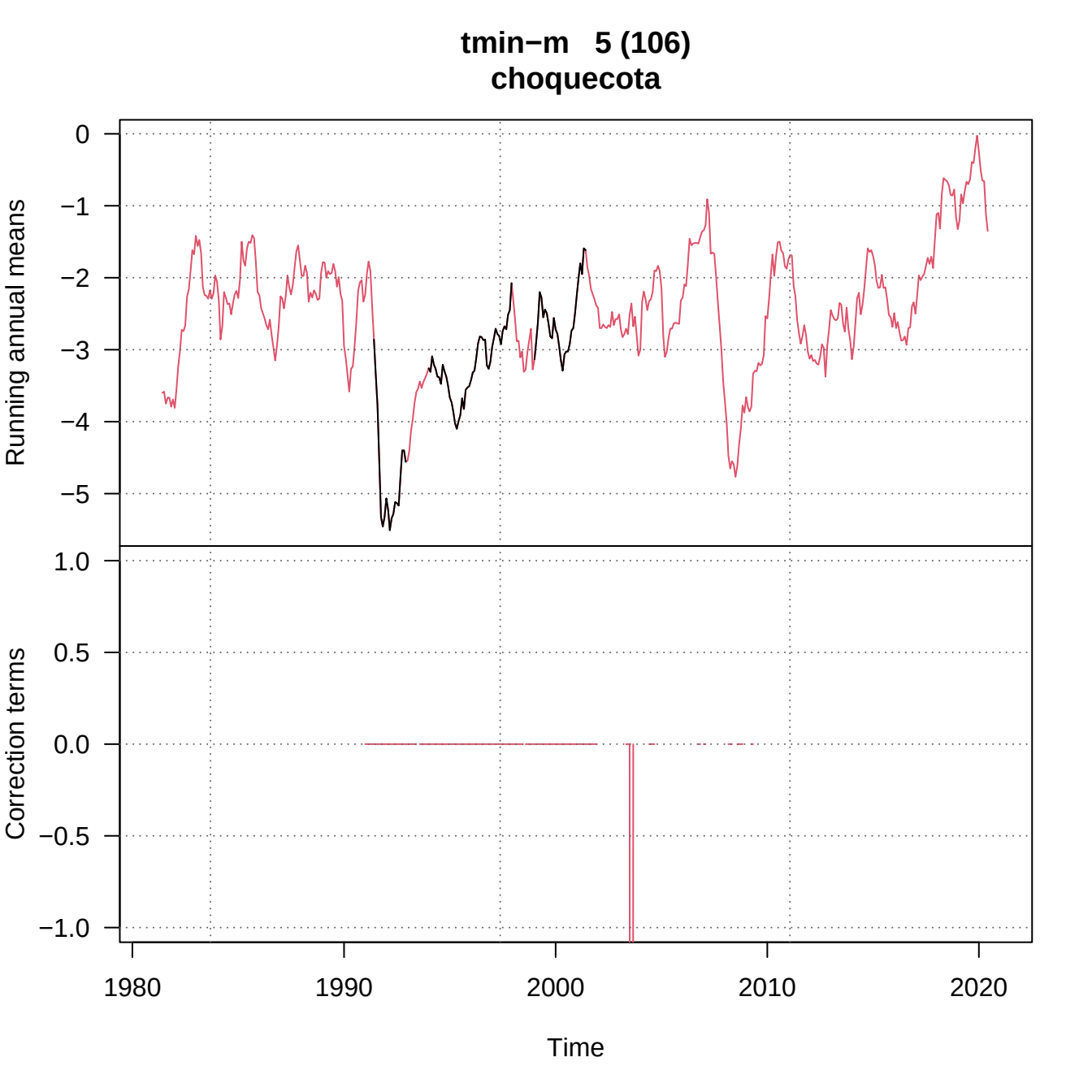
Adjusted series and applied corrections

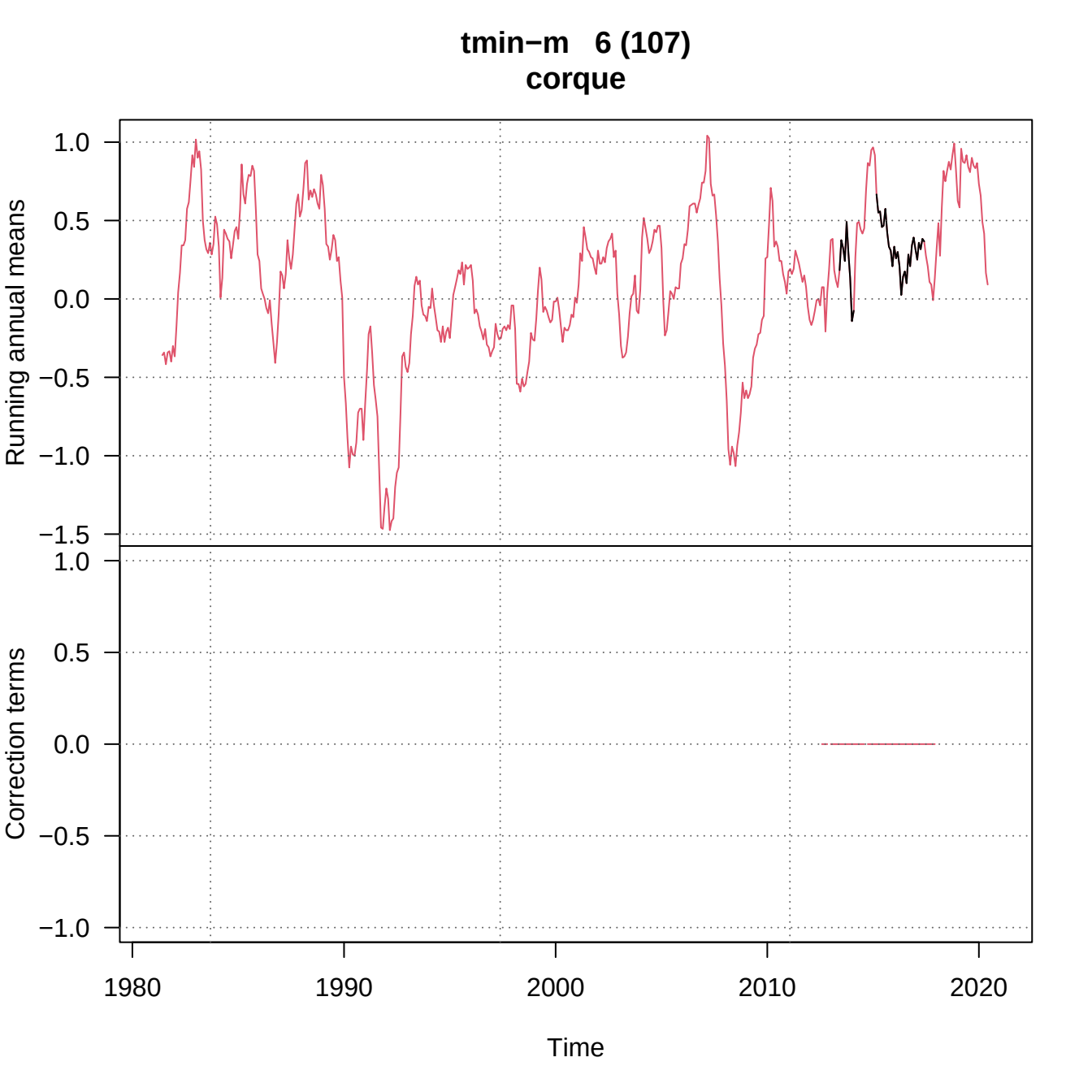

tmin−m 1 (100)
aeropuerto
Running annual means
1
0
−1
−2
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

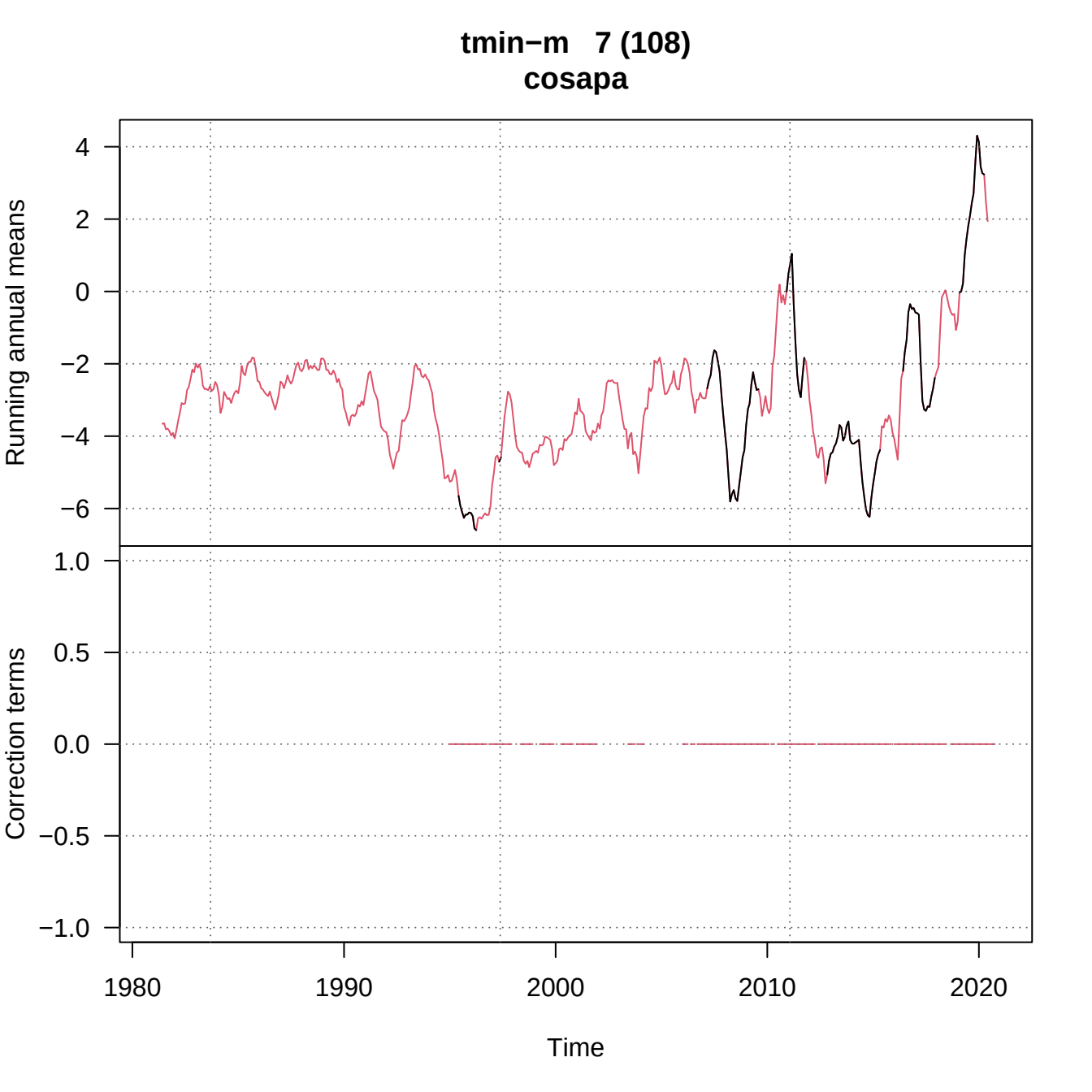

tmin−m 2 (101)
andamarca
Running annual means
1
0
−1
−2
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

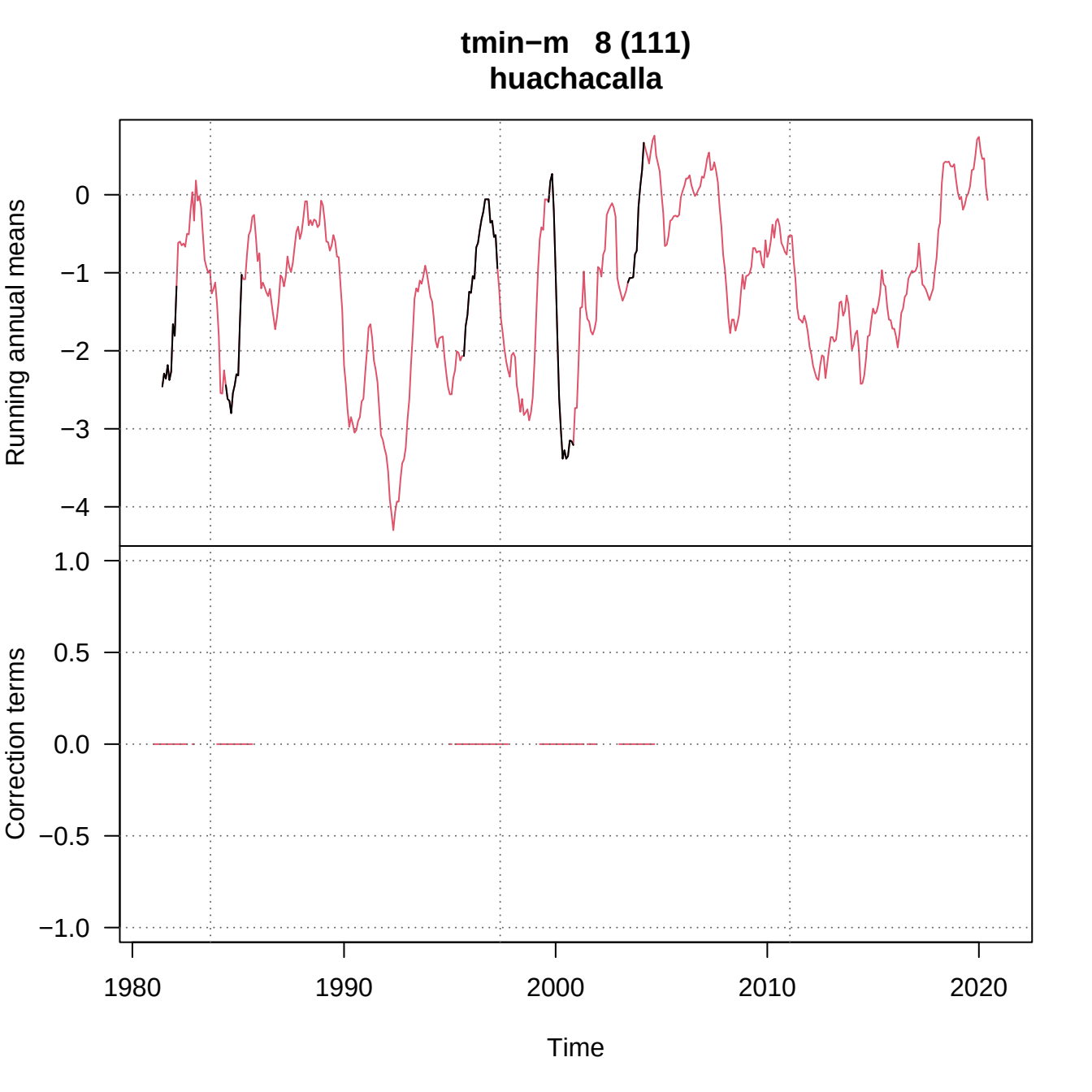

tmin−m 3 (102)
antequera
Running annual means
3.0
2.5
2.0
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

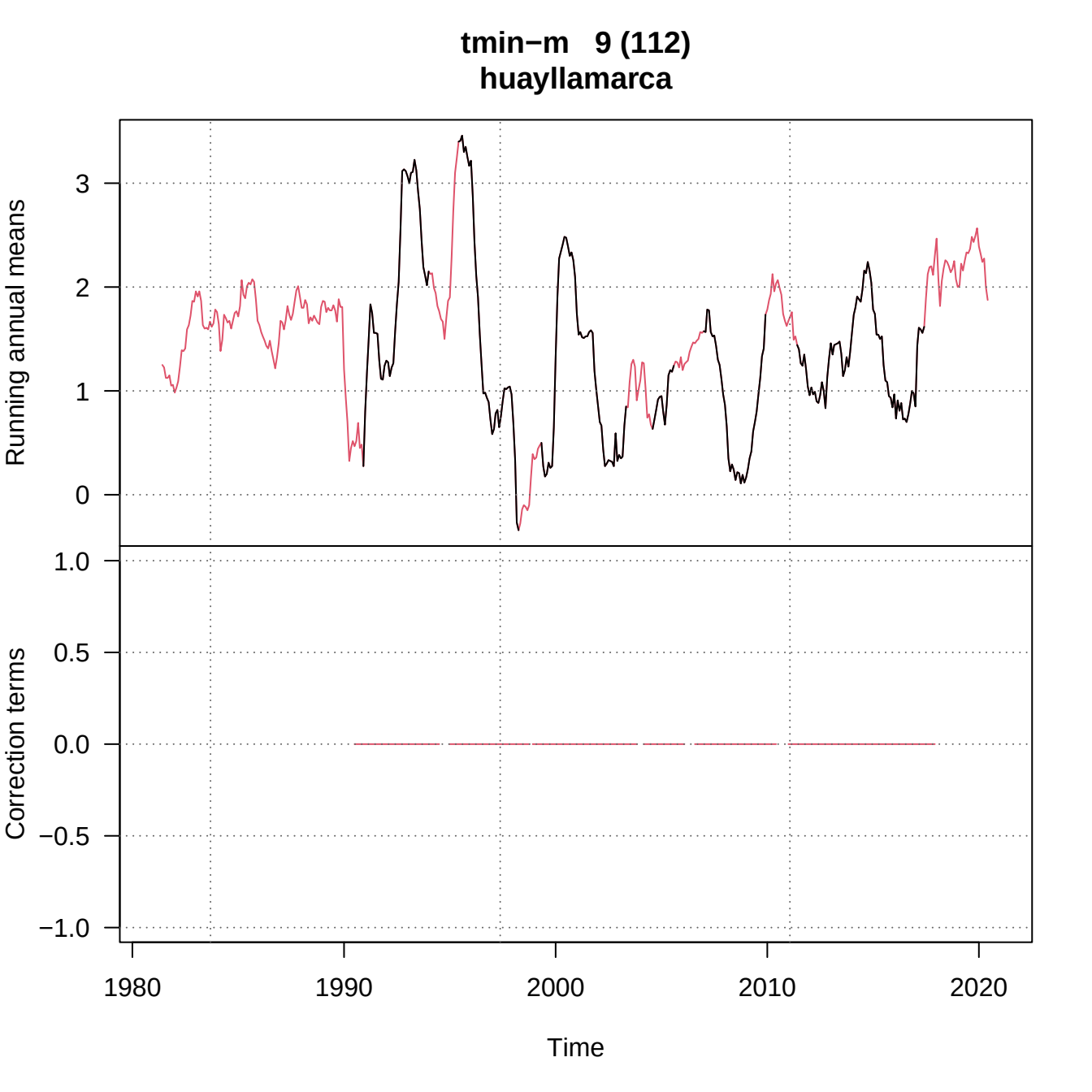

tmin−m 4 (105)
chillca
Running annual means
4
2
0
−2
−4
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

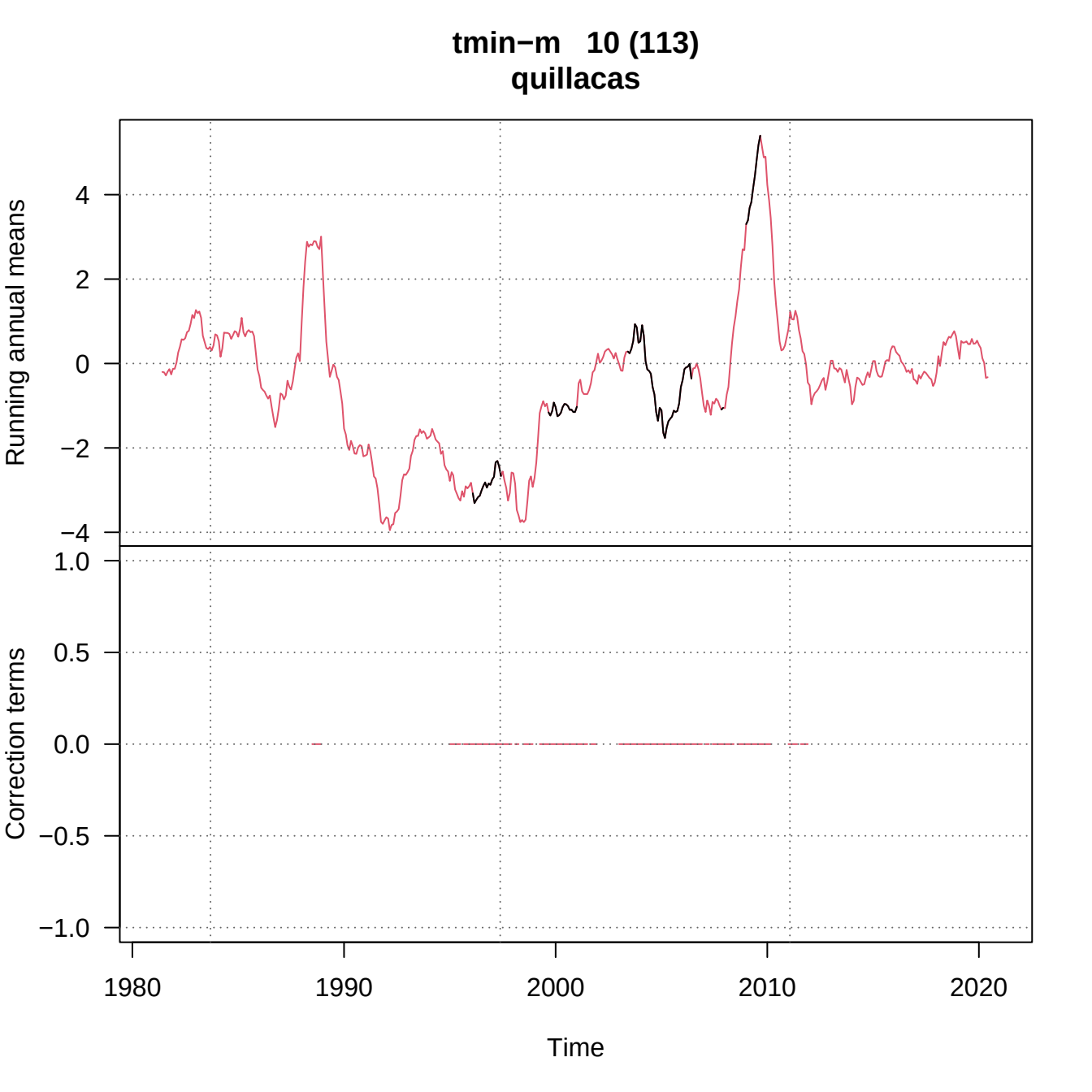

tmin−m 5 (106)
choquecota
Running annual means
0
−1
−2
−3
−4
−5
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

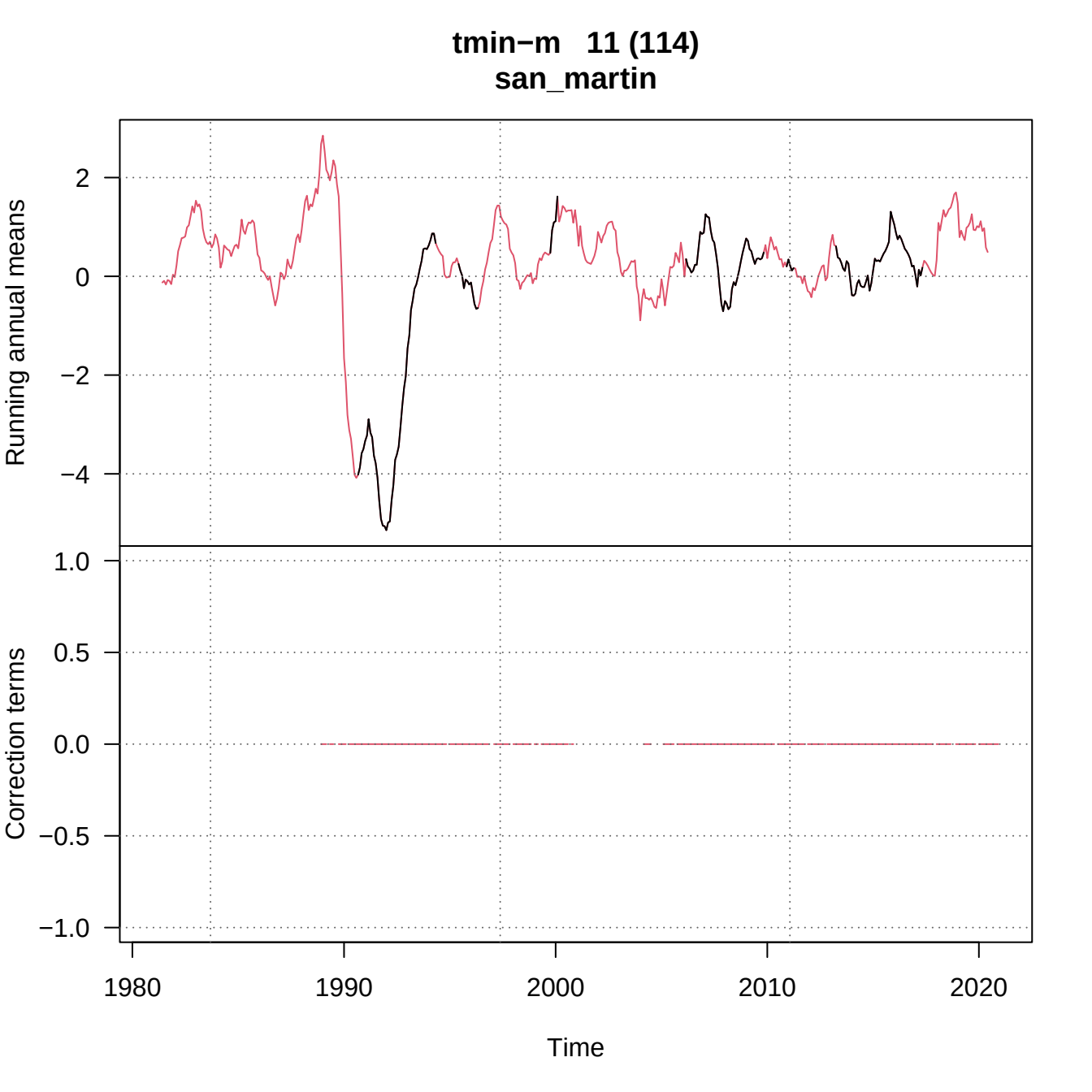

tmin−m 6 (107)
corque
Running annual means
1.0
0.5
0.0
−0.5
−1.0
−1.5
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

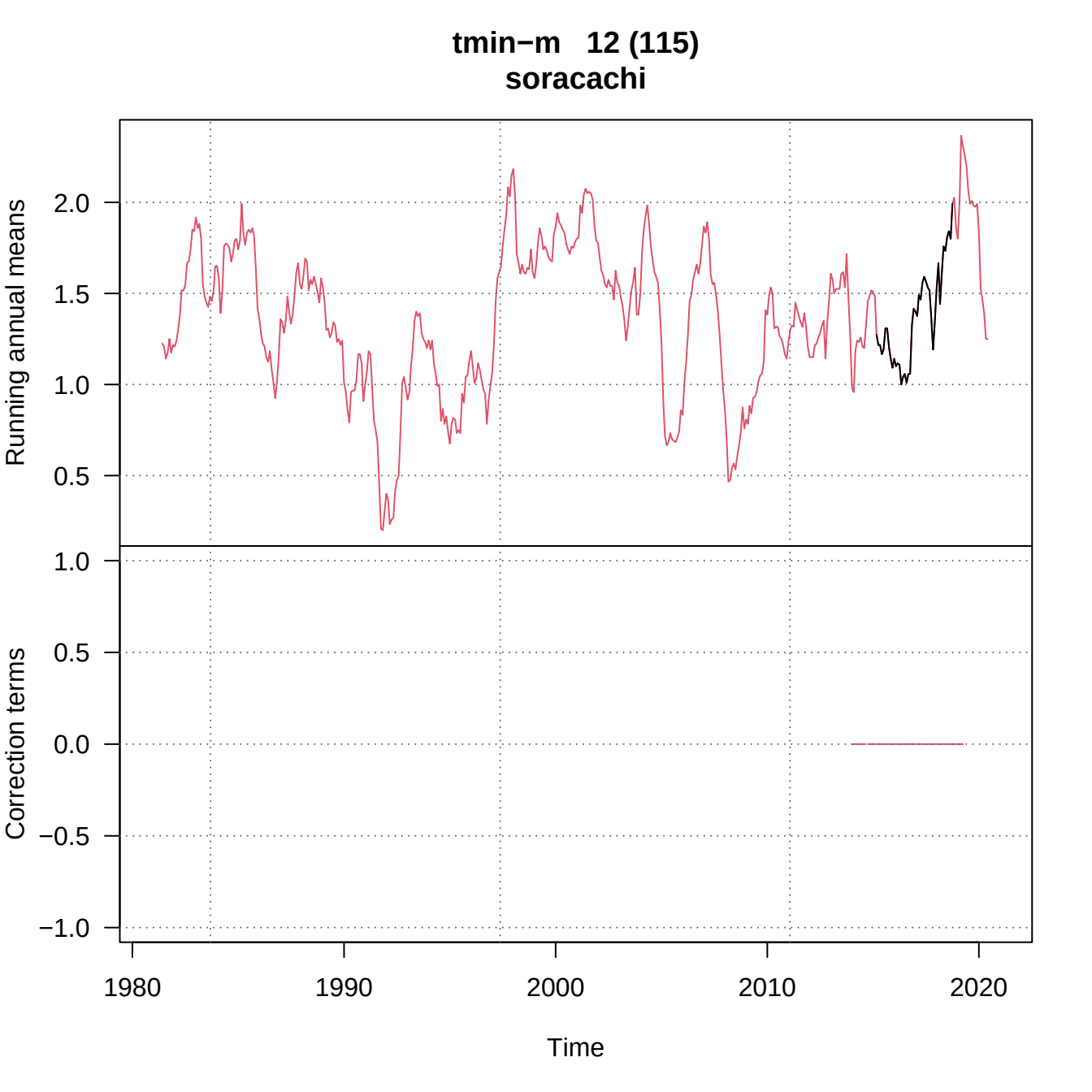

tmin−m 7 (108)
cosapa
Running annual means
4
2
0
−2
−4
−6
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

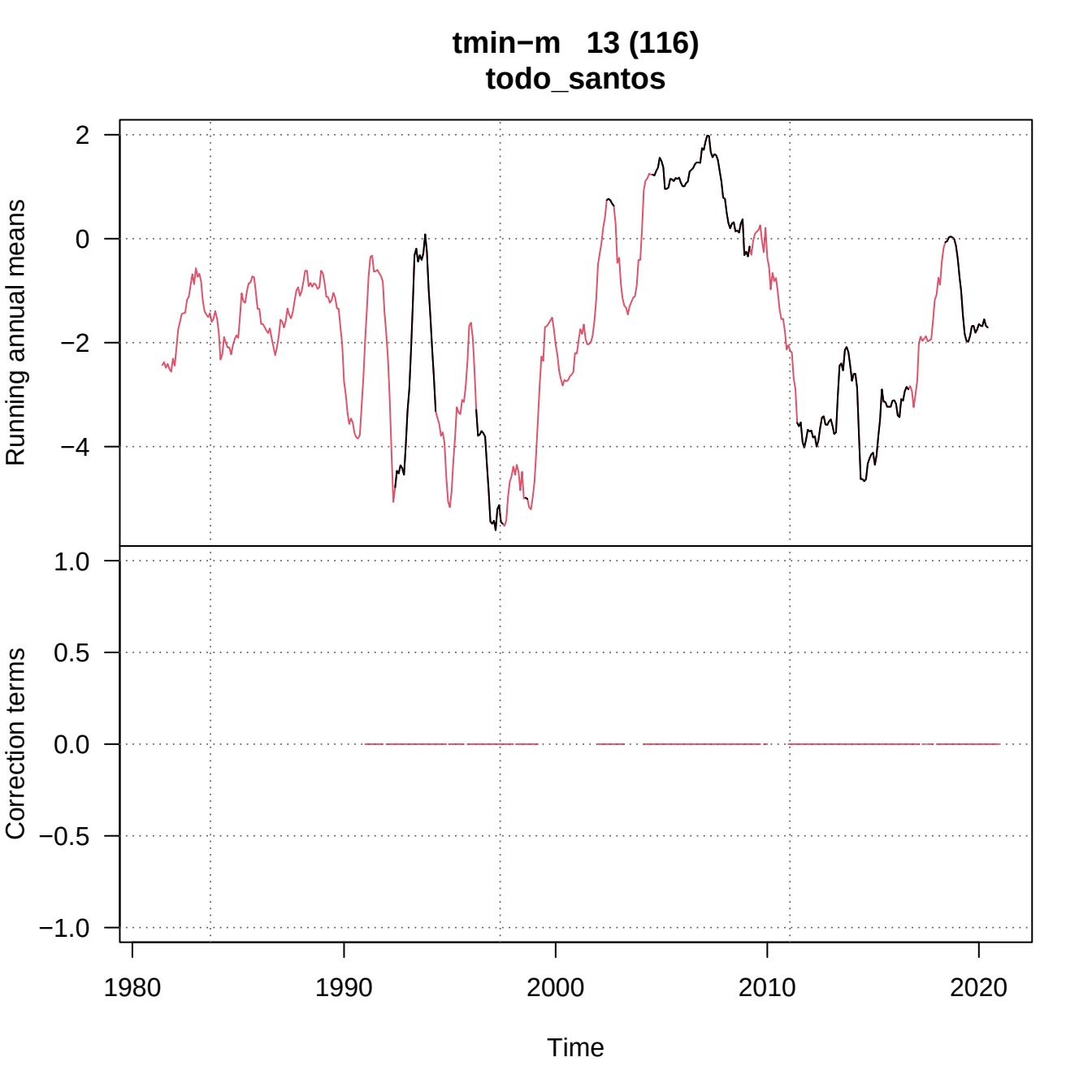

tmin−m 8 (111)
huachacalla
Running annual means
0
−1
−2
−3
−4
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

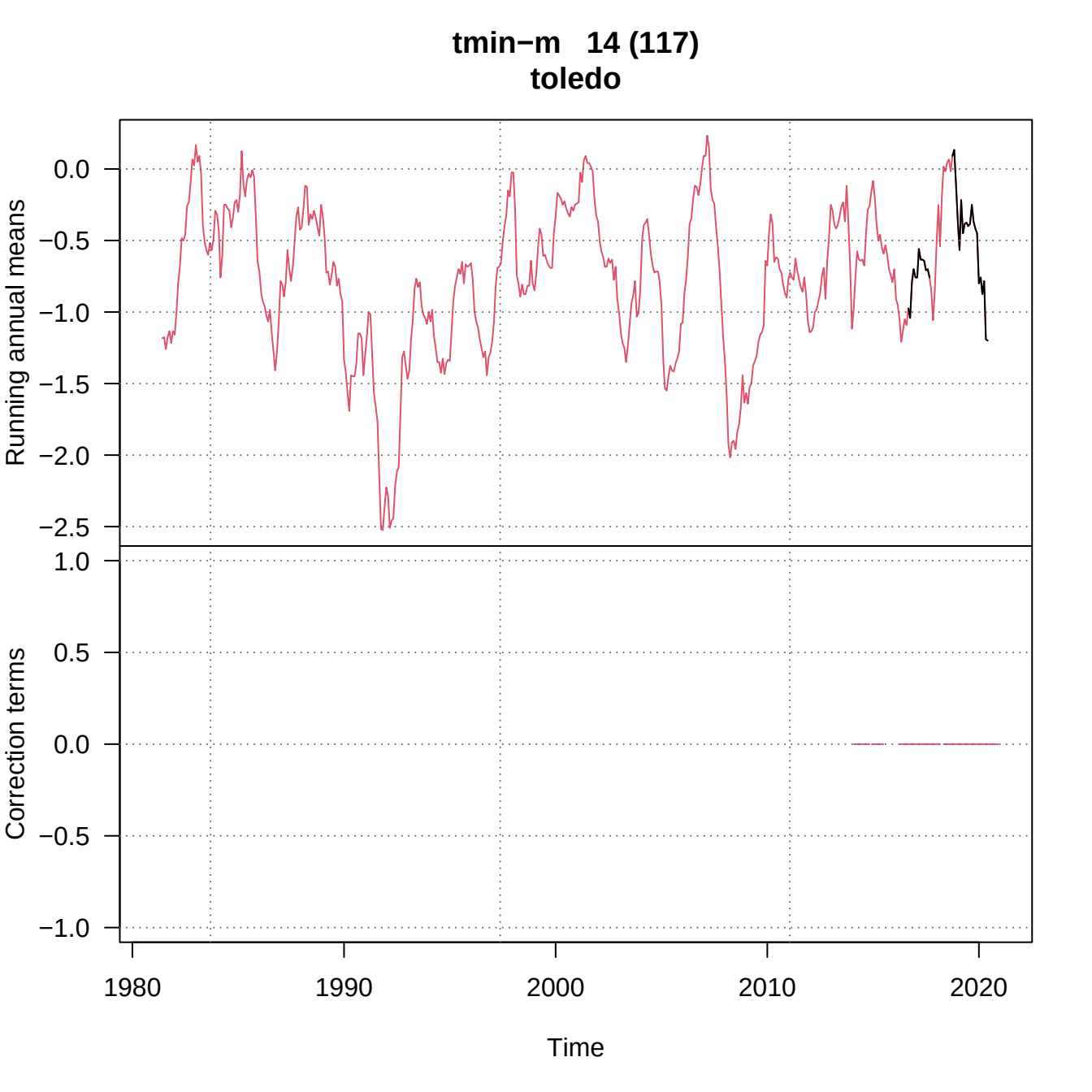

tmin−m 9 (112)
huayllamarca
Running annual means
3
2
1
0
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

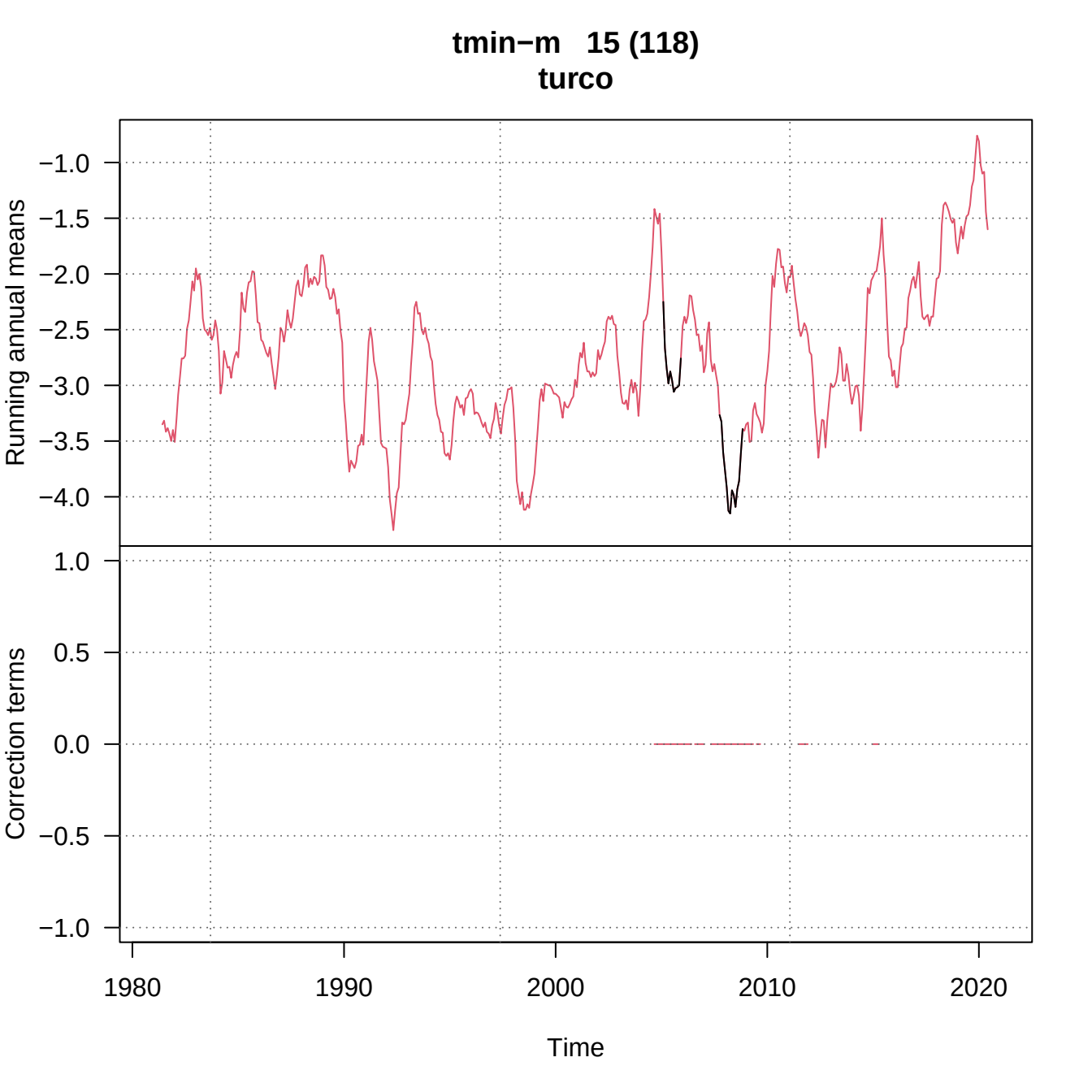

tmin−m 10 (113)
quillacas
Running annual means
4
2
0
−2
−4
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

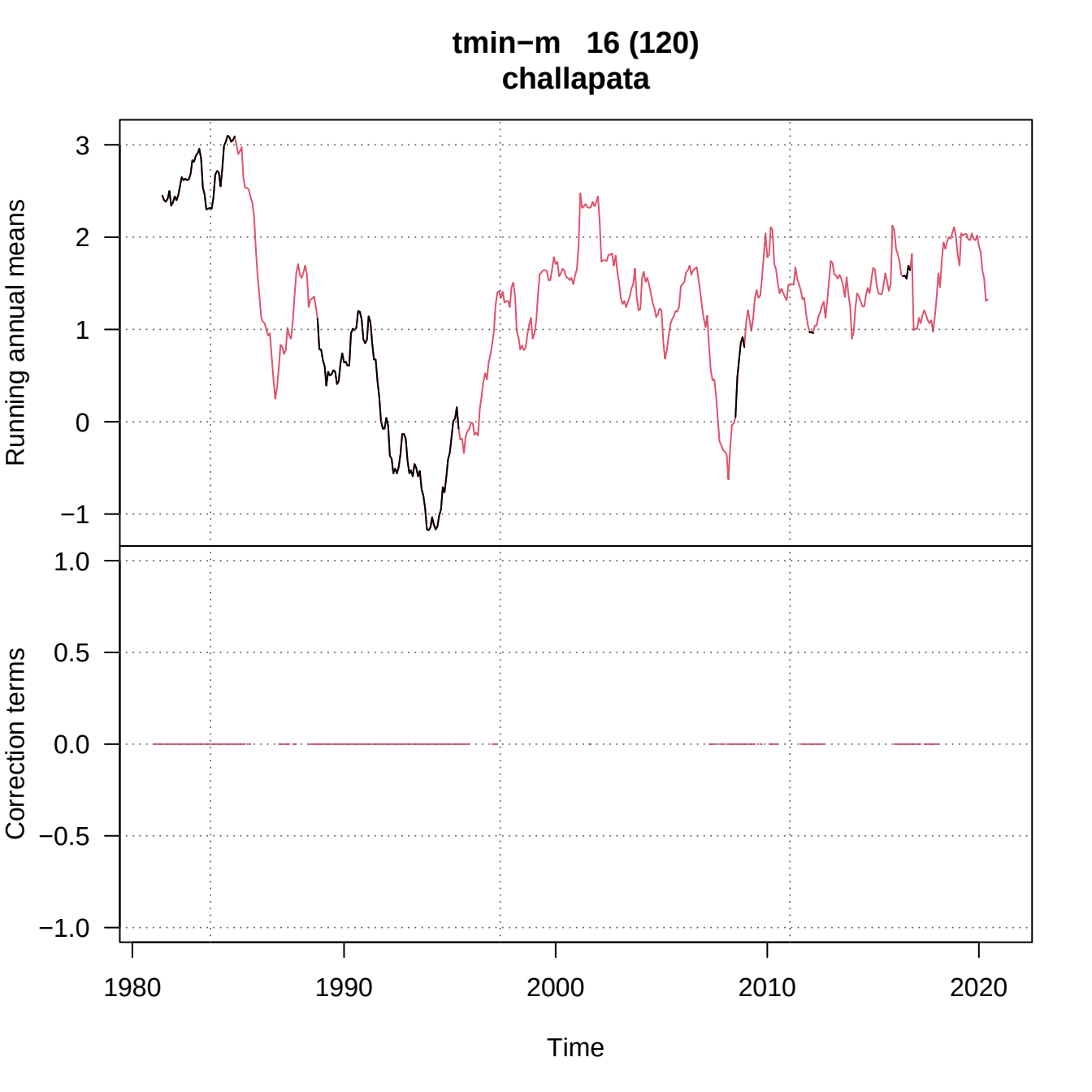

tmin−m 11 (114)
san_martin
Running annual means
2
0
−2
−4
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

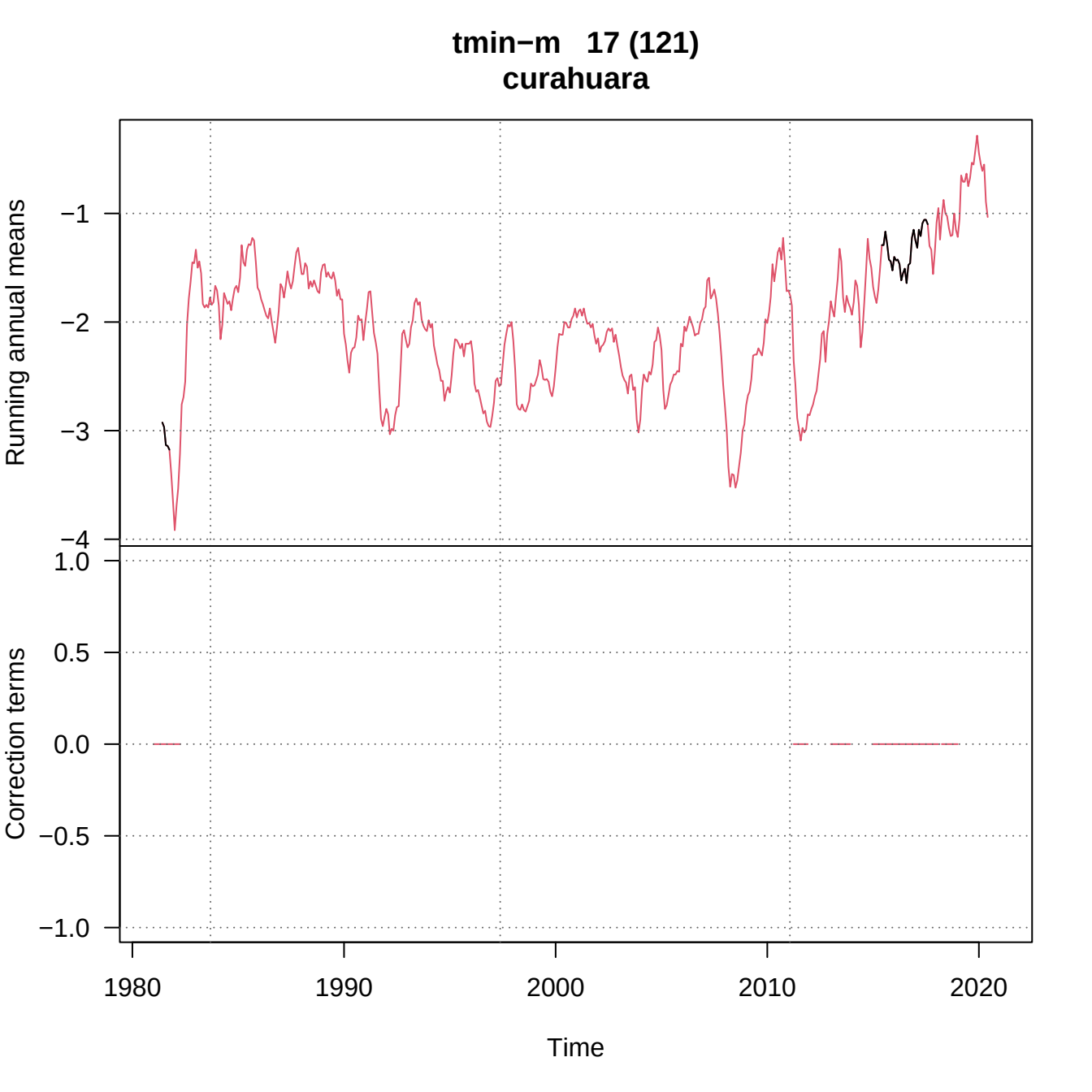

tmin−m 12 (115)
soracachi
Running annual means
2.0
1.5
1.0
0.5
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

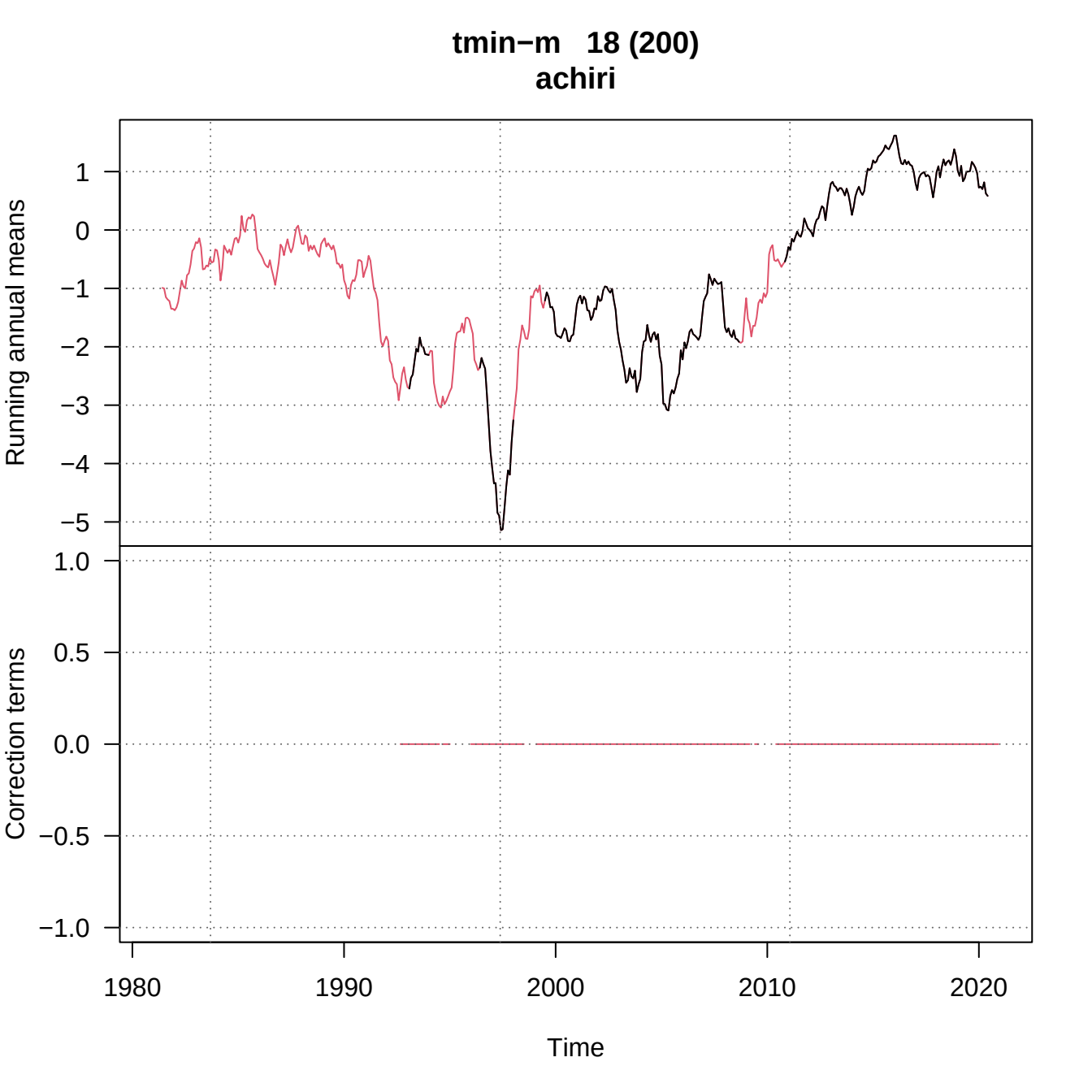

tmin−m 13 (116)
todo_santos
Running annual means
2
0
−2
−4
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

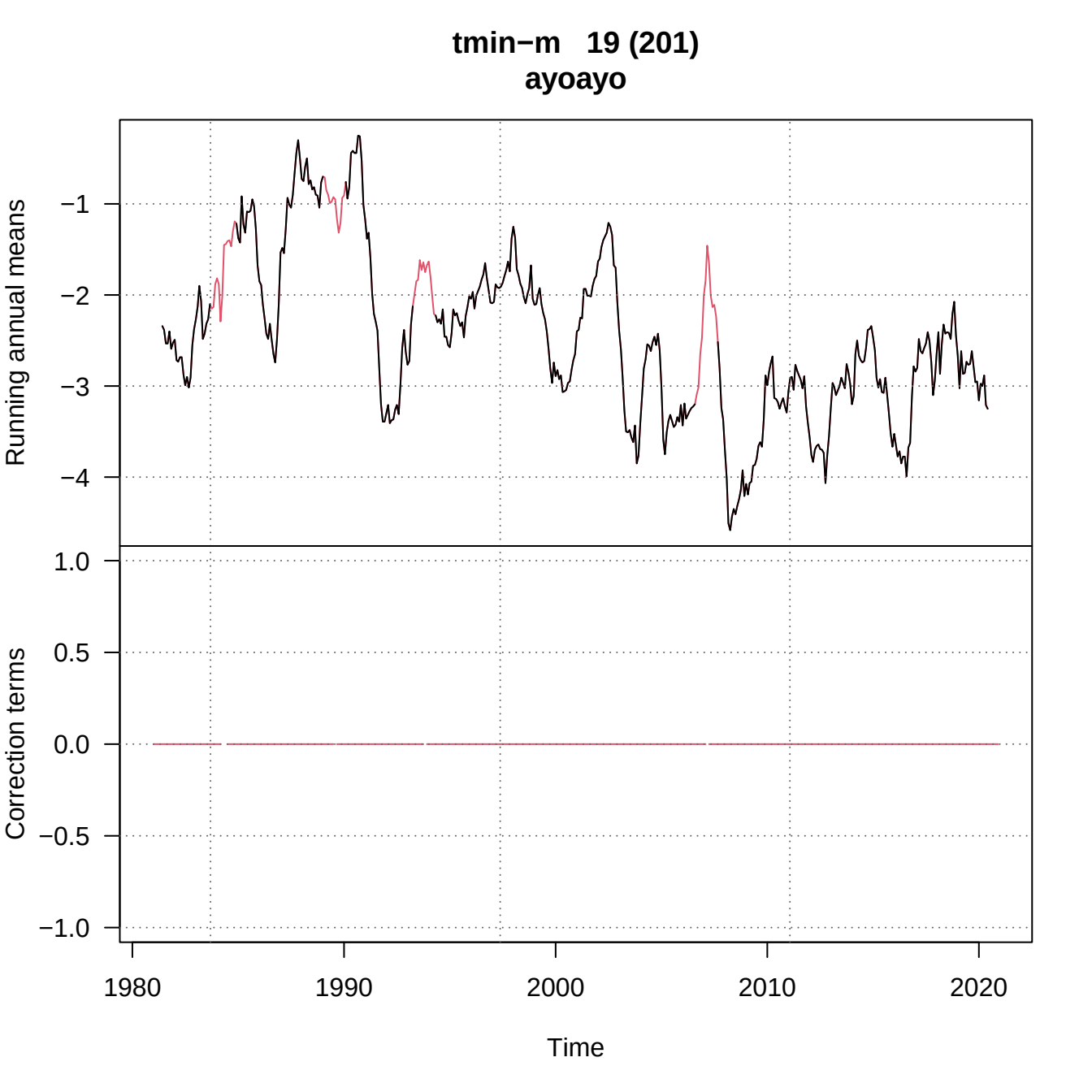

tmin−m 14 (117)
toledo
Running annual means
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

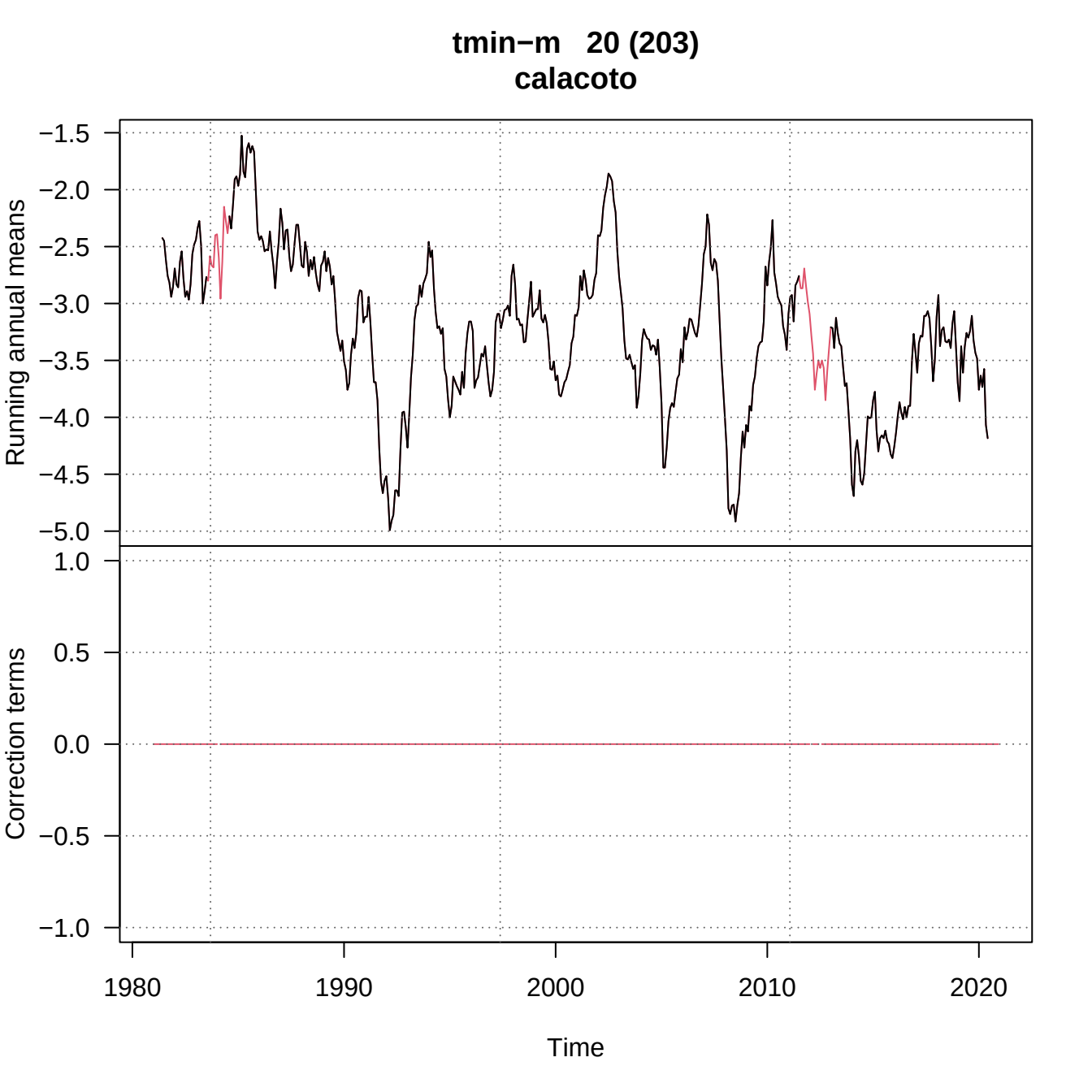

tmin−m 15 (118)
turco
Running annual means
−1.0
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

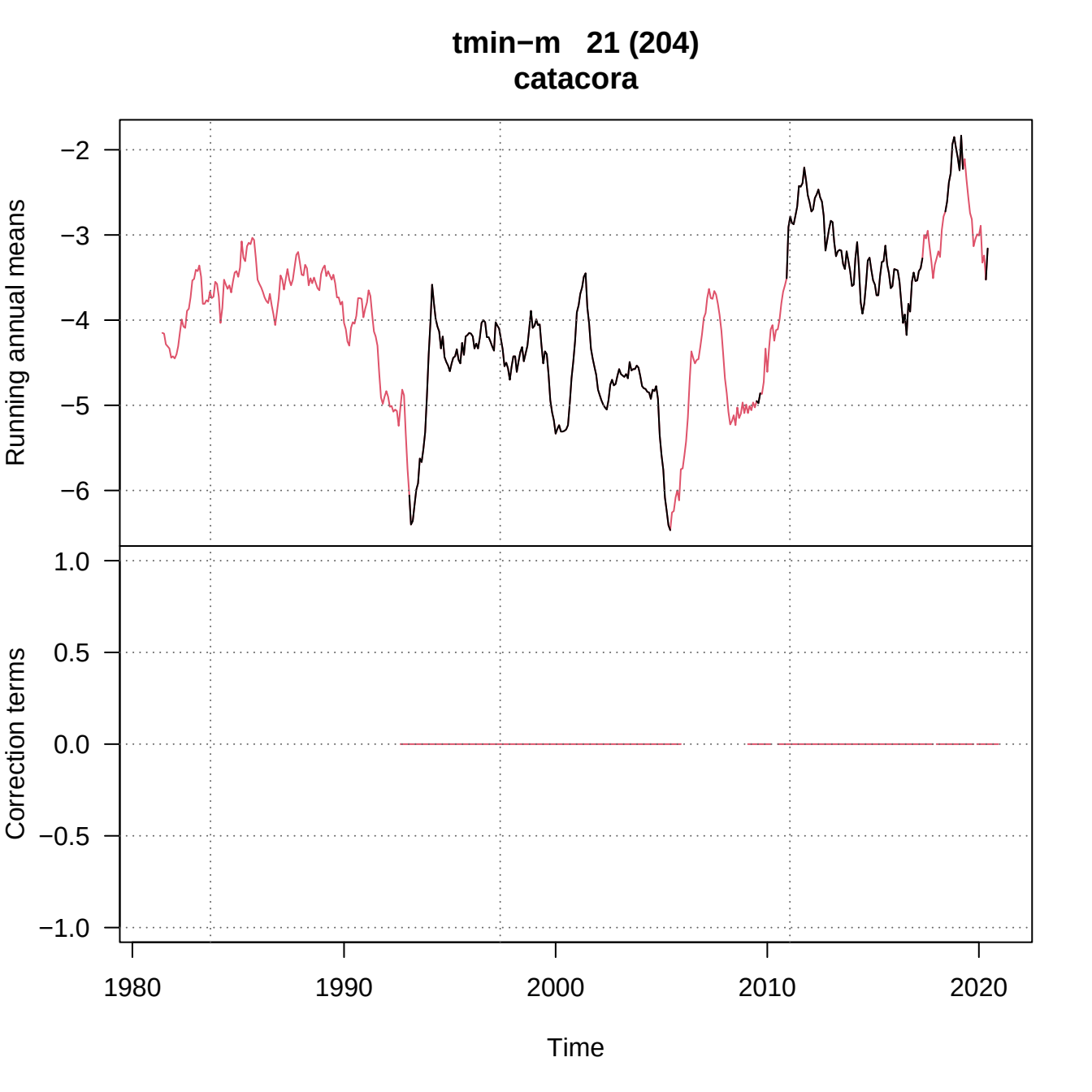

tmin−m 16 (120)
challapata
Running annual means
3
2
1
0
−1
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

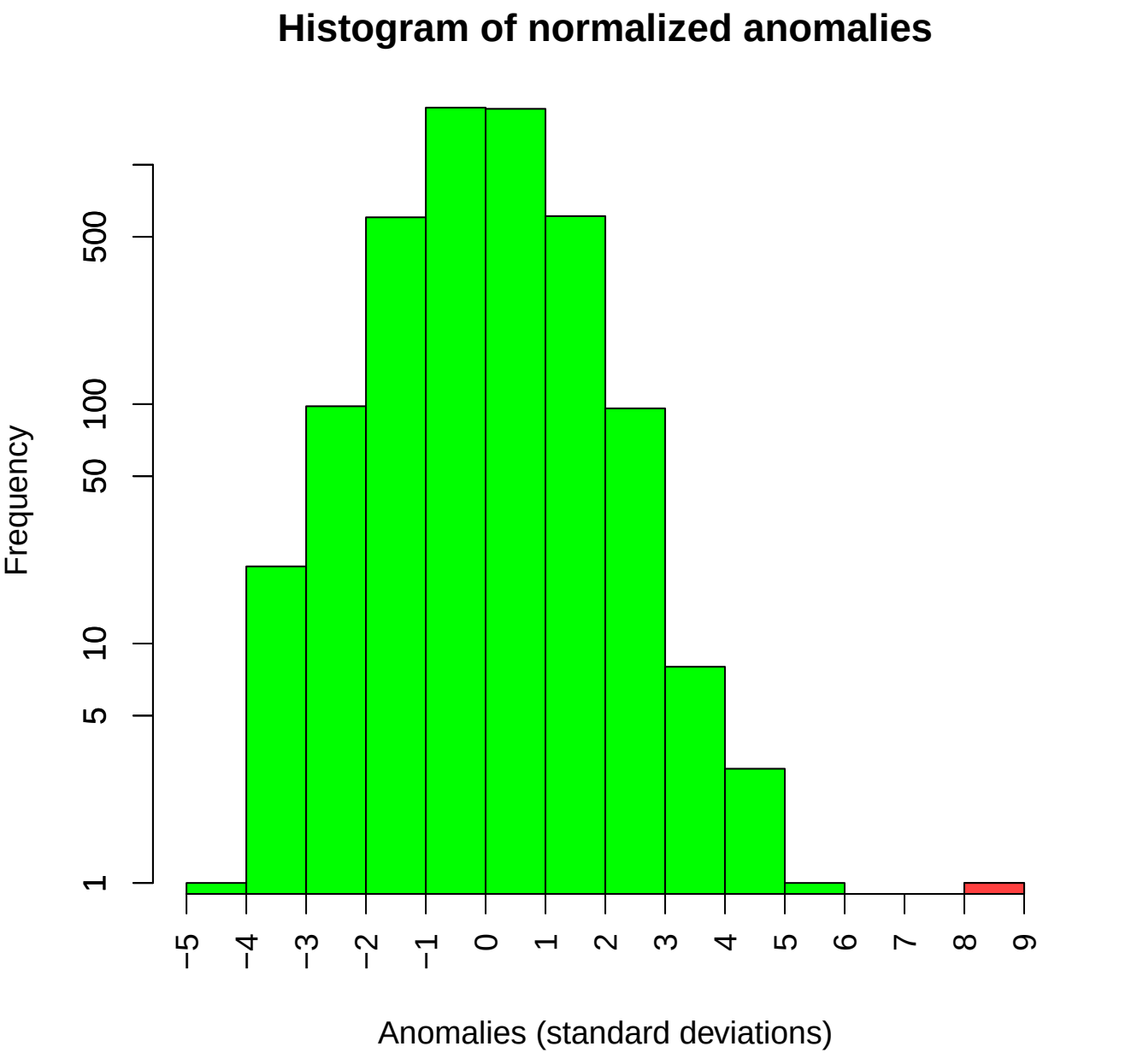

tmin−m 17 (121)
curahuara
Running annual means
−1
−2
−3
−4
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

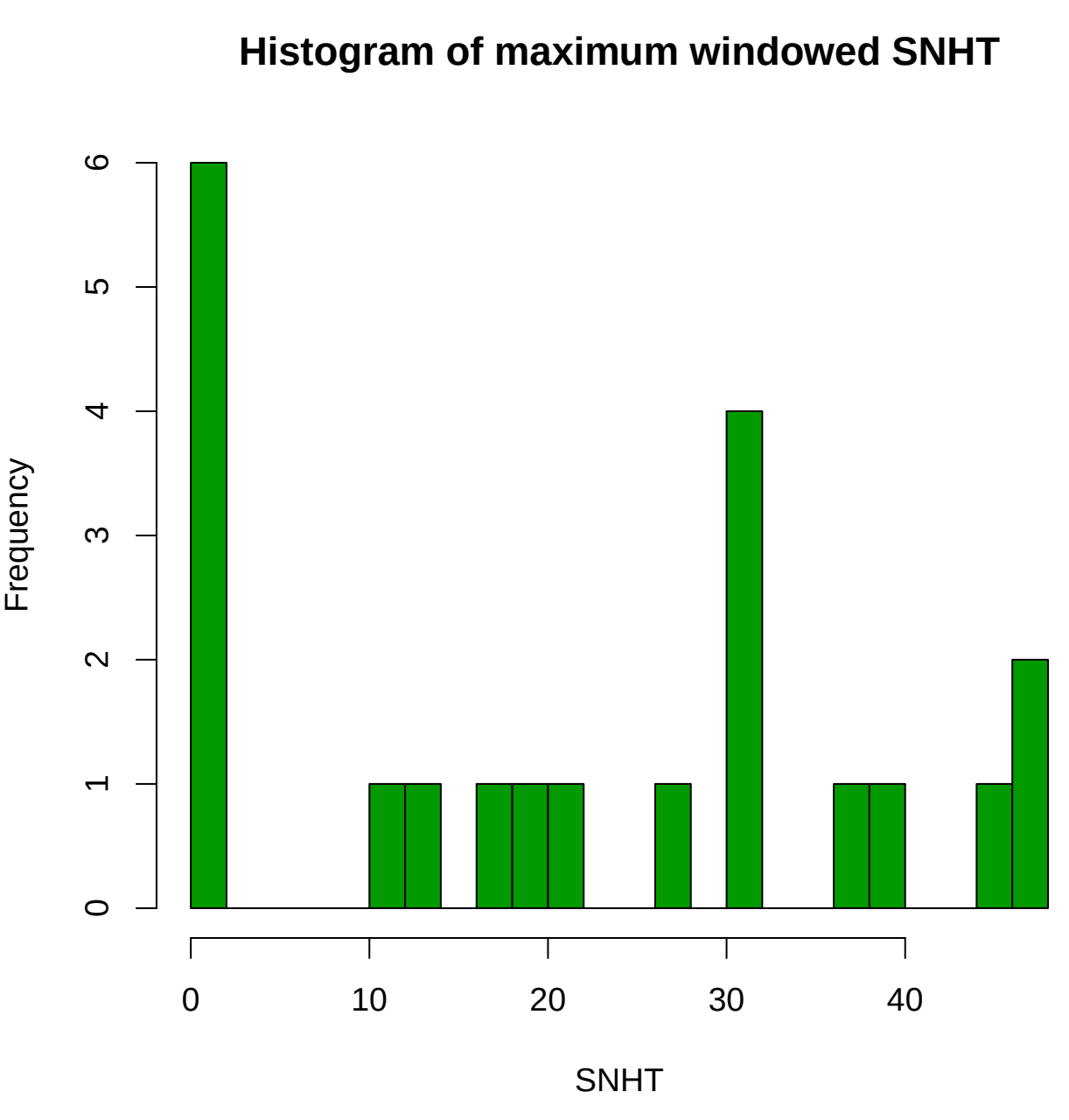

tmin−m 18 (200)
achiri
Running annual means
1
0
−1
−2
−3
−4
−5
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

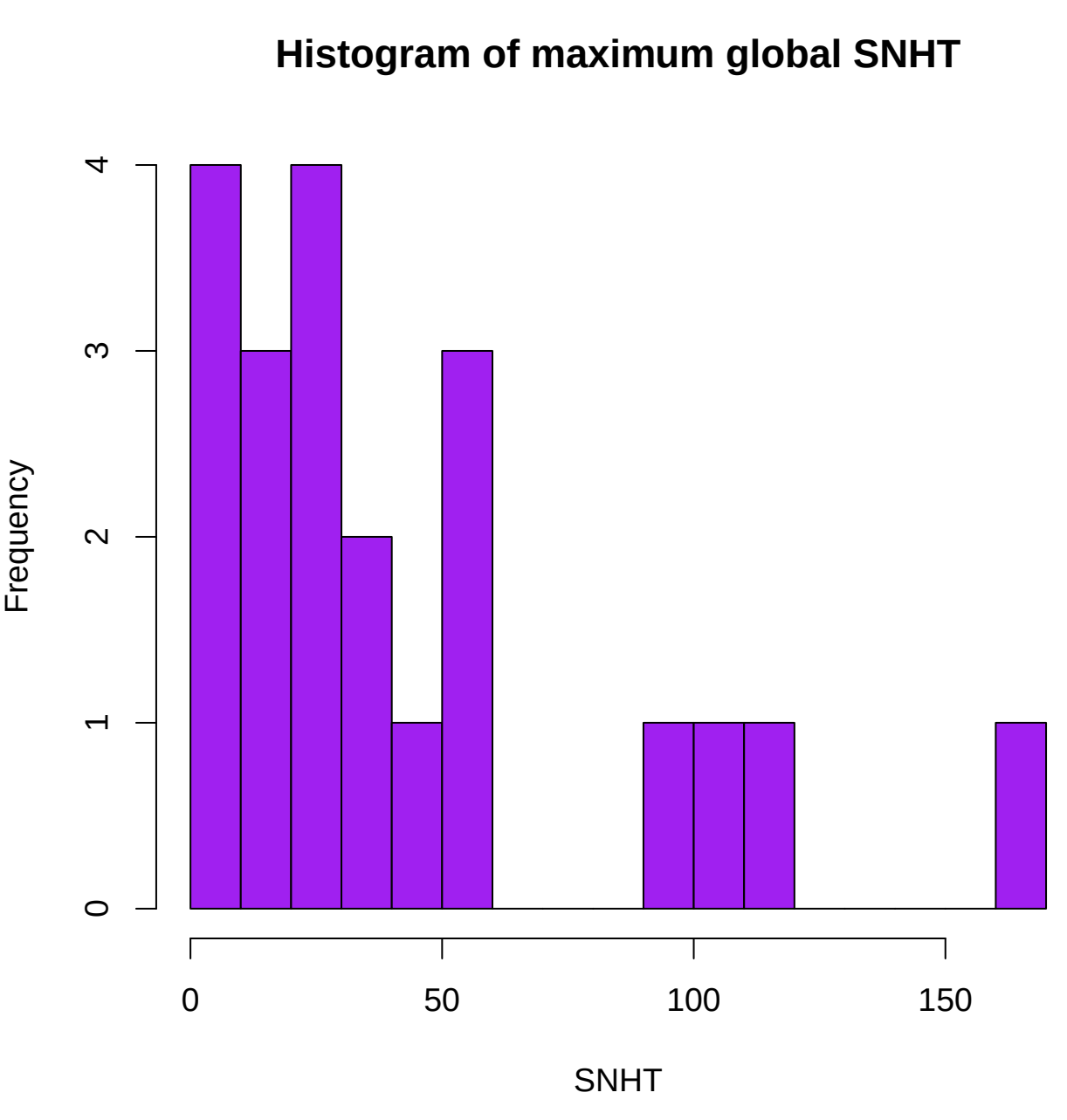

tmin−m 19 (201)
ayoayo
Running annual means
−1
−2
−3
−4
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time

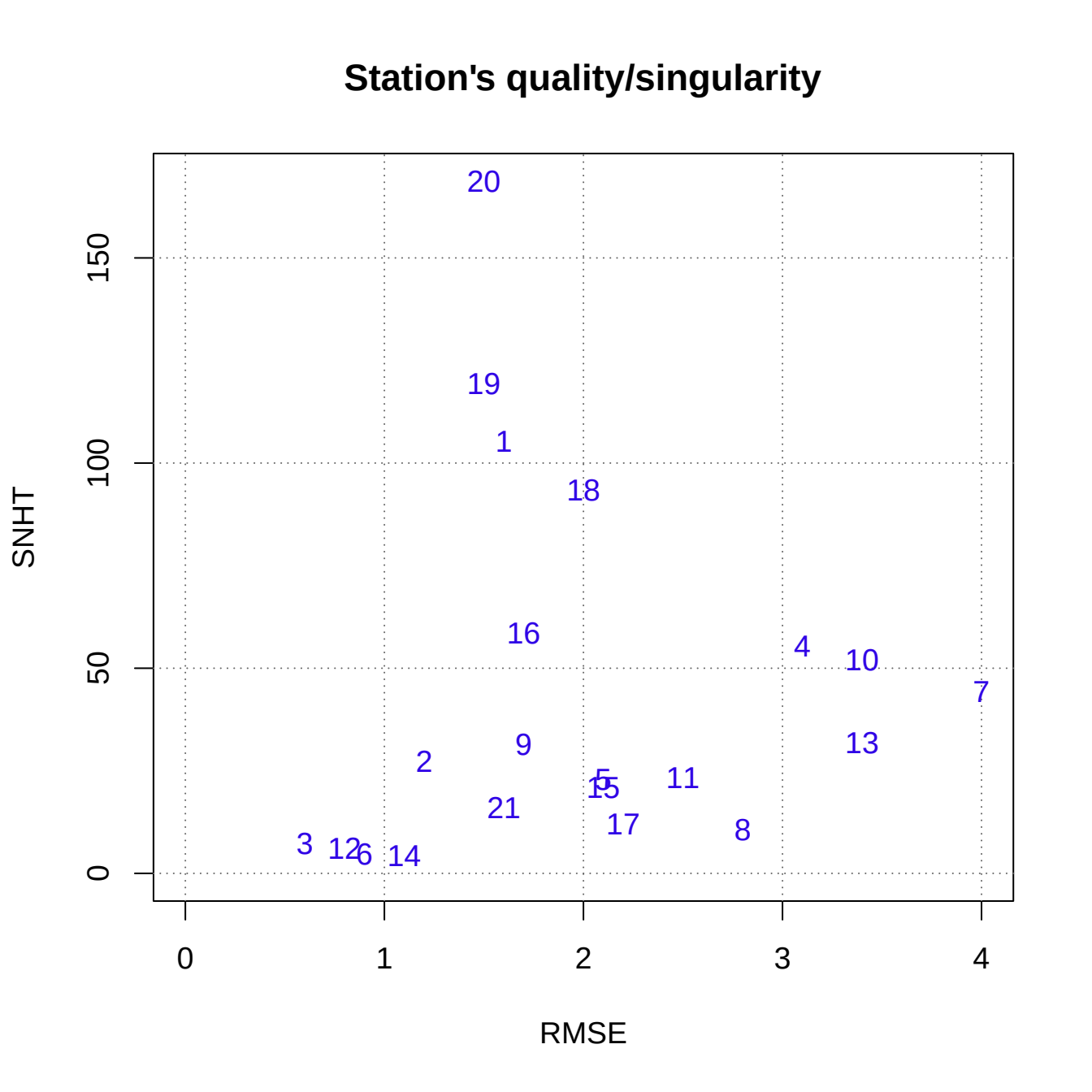

tmin−m 20 (203)
calacoto
Running annual means
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
−4.5
−5.0
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time


tmin−m 21 (204)
catacora
Running annual means
−2
−3
−4
−5
−6
Correction terms
1.0
0.5
0.0
−0.5
−1.0
1980
1990
2000
2010
2020
Time


Histogram of normalized anomalies
Frequency
1
5
10
50
100
500
−5
−4
−3
−2
−1
0
1
2
3
4
5
6
7
8
9
Anomalies (standard deviations)


Histogram of maximum windowed SNHT
Frequency
0
1
2
3
4
5
6
0
10
20
30
40
SNHT


Histogram of maximum global SNHT
Frequency
0
1
2
3
4
0
50
100
150
SNHT


Station's quality/singularity
SNHT
RMSE
0
50
100
150
0
1
2
3
4
20
19
1
18
16
4
10
7
9
13
2
5
15
11
21
17
8
3
12
6
14