

This book presents a comprehensive survey of the climatology and meteorology of Antarctica. As well as describing the climate which prevails in the Antarctic, the book also considers the processes by which this climate is maintained and explores links between the Antarctic and the global climate system.

The first section of the book reviews the methods by which we can observe the Antarctic atmosphere and presents a synthesis of climatological measurements. In the second section, the processes which maintain the observed climate are considered, starting with large-scale atmospheric circulation and

moving through synoptic-scale weather systems to mesoscale and small-scale processes. The final section reviews our current knowledge of the variability of the Antarctic climate and considers changes that may occur in Antarctica as a result of 'greenhouse' warming.

Throughout the book, the links between the Antarctic atmosphere and other elements of the Antarctic climate system (oceans, sea ice and ice sheets) are stressed and the processes which couple the Antarctic with the global climate system are examined. The instruments and platforms used in Antarctic climate studies are discussed (including automatic stations and international data

centres), with special emphasis on the role of remote sensing from satellites and numerical modelling techniques.

This volume will be of greatest interest to meteorologists and climatologists with a specialised interest in Antarctica and the Southern Ocean, but it will also appeal to researchers in Antarctic glaciology, oceanography and biology. Graduates and undergraduates studying physical geography or the earth, atmospheric and environmental sciences will find much useful background material in the book.

**Series editors** A.J. Dessler, J.T. Houghton and M.J. Rycroft

This series of upper-level texts and research monographs covers the physics and chemistry of different regions of the Earth's atmosphere, from the troposphere and stratosphere, up through the ionosphere and magnetosphere and out to the interplanetary medium.

**Cover illustration** An infrared satellite image of a mesocyclone over the Ronne Ice Shelf at 21:09 GMT 4 May 1993.

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# Contents

Introduction	1
1.1	Physical characteristics of the Antarctic 1
1.2	A brief history of Antarctic meteorology 4
1.3	The role of the Antarctic atmosphere in the global climate system 10
Chapter 1 Introduction 1	1
2.1	Observing in the Antarctic 13
2.2	Instruments for meteorological measurements 14
2.3	Automatic weather stations 20
2.4	Drifting buoys 29
2.5	Surface-based remote sensing 36
2.6	Satellites, space-based observing systems and ground stations 38
2.7	The station network and communications 57
2.8	Data sets and data centres 59
Chapter 2 Observations and instrumentation 13	13
3.1	Radiation 68
3.2	Temperature and humidity 81
3.3	Pressure, geopotential and wind 89
3.4	Clouds and precipitation 97
3.5	Sea ice and the Southern Ocean environment 120
Chapter 3 Physical climatology 68	68
4.1	Atmospheric circulation and the hydrological cycle 145
4.2	The West Wind belt 149
4.3	Atmospheric circulation and the hydrological cycle 153
4.4	The winter monsoon 157
4.5	Regional models 158
Chapter 4 Physical climatology 145	145
5.1	Clouds and the climate system 182
5.2	Atmospheric circulation 183
5.3	Life cycle of depressions 188
5.4	Decadal variation in the Antarctic and over the Southern Ocean 190
5.5	Clouds 193
5.6	Publication of observational surfaces and forecasts 194
5.7	Future research needs 198
Chapter 5 Physical climatology 193	193
6.1	Atmospheric moisture and clouds 205
6.2	Life cycle of depressions 208
6.3	Decadal variation in the Antarctic 210
6.4	Clouds 213
6.5	Publication of observational surfaces and forecasts 214
6.6	Future research needs 218
Chapter 6 Physical climatology 205	205
7.1	Atmospheric moisture and clouds 225
7.2	Life cycle of depressions 228
7.3	Decadal variation in the Antarctic 230
7.4	Clouds 233
7.5	Publication of observational surfaces and forecasts 234
7.6	Future research needs 238
Chapter 7 Physical climatology 225	225
8.1	Atmospheric moisture and clouds 255
8.2	Life cycle of depressions 258
8.3	Decadal variation in the Antarctic 260
8.4	Clouds 263
8.5	Publication of observational surfaces and forecasts 264
8.6	Future research needs 268
Chapter 8 Physical climatology 255	255
9.1	Atmospheric moisture and clouds 285
9.2	Life cycle of depressions 288
9.3	Decadal variation in the Antarctic 290
9.4	Clouds 293
9.5	Publication of observational surfaces and forecasts 294
9.6	Future research needs 298
Chapter 9 Physical climatology 285	285
10.1	Atmospheric moisture and clouds 325
10.2	Life cycle of depressions 328
10.3	Decadal variation in the Antarctic 330
10.4	Clouds 333
10.5	Publication of observational surfaces and forecasts 334
10.6	Future research needs 338
Chapter 10 Physical climatology 325	325
11.1	Atmospheric moisture and clouds 355
11.2	Life cycle of depressions 358
11.3	Decadal variation in the Antarctic 360
11.4	Clouds 363
11.5	Publication of observational surfaces and forecasts 364
11.6	Future research needs 368
Chapter 11 Physical climatology 355	355
12.1	Atmospheric moisture and clouds 395
12.2	Life cycle of depressions 398
12.3	Decadal variation in the Antarctic 400
12.4	Clouds 403
12.5	Publication of observational surfaces and forecasts 404
12.6	Future research needs 408
Chapter 12 Physical climatology 395	395
13.1	Atmospheric moisture and clouds 435
13.2	Life cycle of depressions 438
13.3	Decadal variation in the Antarctic 440
13.4	Clouds 443
13.5	Publication of observational surfaces and forecasts 444
13.6	Future research needs 448
Chapter 13 Physical climatology 435	435
14.1	Atmospheric moisture and clouds 475
14.2	Life cycle of depressions 478
14.3	Decadal variation in the Antarctic 480
14.4	Clouds 483
14.5	Publication of observational surfaces and forecasts 484
14.6	Future research needs 488
Chapter 14 Physical climatology 475	475
15.1	Atmospheric moisture and clouds 515
15.2	Life cycle of depressions 518
15.3	Decadal variation in the Antarctic 520
15.4	Clouds 523
15.5	Publication of observational surfaces and forecasts 524
15.6	Future research needs 528
Chapter 15 Physical climatology 515	515
16.1	Atmospheric moisture and clouds 555
16.2	Life cycle of depressions 558
16.3	Decadal variation in the Antarctic 560
16.4	Clouds 563
16.5	Publication of observational surfaces and forecasts 564
16.6	Future research needs 568
Chapter 16 Physical climatology 555	555
17.1	Atmospheric moisture and clouds 595
17.2	Life cycle of depressions 598
17.3	Decadal variation in the Antarctic 600
17.4	Clouds 603
17.5	Publication of observational surfaces and forecasts 604
17.6	Future research needs 608
Chapter 17 Physical climatology 595	595
18.1	Atmospheric moisture and clouds 635
18.2	Life cycle of depressions 638
18.3	Decadal variation in the Antarctic 640
18.4	Clouds 643
18.5	Publication of observational surfaces and forecasts 644
18.6	Future research needs 648
Chapter 18 Physical climatology 635	635
19.1	Atmospheric moisture and clouds 675
19.2	Life cycle of depressions 678
19.3	Decadal variation in the Antarctic 680
19.4	Clouds 683
19.5	Publication of observational surfaces and forecasts 684
19.6	Future research needs 688
Chapter 19 Physical climatology 675	675
20.1	Atmospheric moisture and clouds 715
20.2	Life cycle of depressions 718
20.3	Decadal variation in the Antarctic 720
20.4	Clouds 723
20.5	Publication of observational surfaces and forecasts 724
20.6	Future research needs 728
Chapter 20 Physical climatology 715	715
21.1	Atmospheric moisture and clouds 755
21.2	Life cycle of depressions 758
21.3	Decadal variation in the Antarctic 760
21.4	Clouds 763
21.5	Publication of observational surfaces and forecasts 764
21.6	Future research needs 768
Chapter 21 Physical climatology 755	755
22.1	Atmospheric moisture and clouds 795
22.2	Life cycle of depressions 798
22.3	Decadal variation in the Antarctic 800
22.4	Clouds 803
22.5	Publication of observational surfaces and forecasts 804
22.6	Future research needs 808
Chapter 22 Physical climatology 795	795
23.1	Atmospheric moisture and clouds 835
23.2	Life cycle of depressions 838
23.3	Decadal variation in the Antarctic 840
23.4	Clouds 843
23.5	Publication of observational surfaces and forecasts 844
23.6	Future research needs 848
Chapter 23 Physical climatology 835	835
24.1	Atmospheric moisture and clouds 875
24.2	Life cycle of depressions 878
24.3	Decadal variation in the Antarctic 880
24.4	Clouds 883
24.5	Publication of observational surfaces and forecasts 884
24.6	Future research needs 888
Chapter 24 Physical climatology 875	875
25.1	Atmospheric moisture and clouds 915
25.2	Life cycle of depressions 918
25.3	Decadal variation in the Antarctic 920
25.4	Clouds 923
25.5	Publication of observational surfaces and forecasts 924
25.6	Future research needs 928
Chapter 25 Physical climatology 915	915
26.1	Atmospheric moisture and clouds 955
26.2	Life cycle of depressions 958
26.3	Decadal variation in the Antarctic 960
26.4	Clouds 963
26.5	Publication of observational surfaces and forecasts 964
26.6	Future research needs 968
Chapter 26 Physical climatology 955	955
27.1	Atmospheric moisture and clouds 995
27.2	Life cycle of depressions 998
27.3	Decadal variation in the Antarctic 1000
27.4	Clouds 1003
27.5	Publication of observational surfaces and forecasts 1004
27.6	Future research needs 1008
Chapter 27 Physical climatology 995	995
28.1	Atmospheric moisture and clouds 1035
28.2	Life cycle of depressions 1038
28.3	Decadal variation in the Antarctic 1040
28.4	Clouds 1043
28.5	Publication of observational surfaces and forecasts 1044
28.6	Future research needs 1048
Chapter 28 Physical climatology 1035	1035
29.1	Atmospheric moisture and clouds 1075
29.2	Life cycle of depressions 1078
29.3	Decadal variation in the Antarctic 1080
29.4	Clouds 1083
29.5	Publication of observational surfaces and forecasts 1084
29.6	Future research needs 1088
Chapter 29 Physical climatology 1075	1075
30.1	Atmospheric moisture and clouds 1115
30.2	Life cycle of depressions 1118
30.3	Decadal variation in the Antarctic 1120
30.4	Clouds 1123
30.5	Publication of observational surfaces and forecasts 1124
30.6	Future research needs 1128
Chapter 30 Physical climatology 1115	1115
31.1	Atmospheric moisture and clouds 1155
31.2	Life cycle of depressions 1158
31.3	Decadal variation in the Antarctic 1160
31.4	Clouds 1163
31.5	Publication of observational surfaces and forecasts 1164
31.6	Future research needs 1168
Chapter 31 Physical climatology 1155	1155
32.1	Atmospheric moisture and clouds 1195
32.2	Life cycle of depressions 1198
32.3	Decadal variation in the Antarctic 1200
32.4	Clouds 1203
32.5	Publication of observational surfaces and forecasts 1204
32.6	Future research needs 1208
Chapter 32 Physical climatology 1195	1195
33.1	Atmospheric moisture and clouds 1235
33.2	Life cycle of depressions 1238
33.3	Decadal variation in the Antarctic 1240
33.4	Clouds 1243
33.5	Publication of observational surfaces and forecasts 1244
33.6	Future research needs 1248
Chapter 33 Physical climatology 1235	1235
34.1	Atmospheric moisture and clouds 1275
34.2	Life cycle of depressions 1278
34.3	Decadal variation in the Antarctic 1280
34.4	Clouds 1283
34.5	Publication of observational surfaces and forecasts 1284
34.6	Future research needs 1288
Chapter 34 Physical climatology 1275	1275
35.1	Atmospheric moisture and clouds 1315
35.2	Life cycle of depressions 1318
35.3	Decadal variation in the Antarctic 1320
35.4	Clouds 1323
35.5	Publication of observational surfaces and forecasts 1324
35.6	Future research needs 1328
Chapter 35 Physical climatology 1315	1315
36.1	Atmospheric moisture and clouds 1355
36.2	Life cycle of depressions 1358
36.3	Decadal variation in the Antarctic 1360
36.4	Clouds 1363
36.5	Publication of observational surfaces and forecasts 1364
36.6	Future research needs 1368
Chapter 36 Physical climatology 1355	1355
37.1	Atmospheric moisture and clouds 1395
37.2	Life cycle of depressions 1398
37.3	Decadal variation in the Antarctic 1400
37.4	Clouds 1403
37.5	Publication of observational surfaces and forecasts 1404
37.6	Future research needs 1408
Chapter 37 Physical climatology 1395	1395
38.1	Atmospheric moisture and clouds 1435
38.2	Life cycle of depressions 1438
38.3	Decadal variation in the Antarctic 1440
38.4	Clouds 1443
38.5	Publication of observational surfaces and forecasts 1444
38.6	Future research needs 1448
Chapter 38 Physical climatology 1435	1435
39.1	Atmospheric moisture and clouds 1475
39.2	Life cycle of depressions 1478
39.3	Decadal variation in the Antarctic 1480
39.4	Clouds 1483
39.5	Publication of observational surfaces and forecasts 1484
39.6	Future research needs 1488
Chapter 39 Physical climatology 1475	1475
40.1	Atmospheric moisture and clouds 1515
40.2	Life cycle of depressions 1518
40.3	Decadal variation in the Antarctic 1520
40.4	Clouds 1523
40.5	Publication of observational surfaces and forecasts 1524
40.6	Future research needs 1528
Chapter 40 Physical climatology 1515	1515
41.1	Atmospheric moisture and clouds 1555
41.2	Life cycle of depressions 1558
41.3	Decadal variation in the Antarctic 1560
41.4	Clouds 1563
41.5	Publication of observational surfaces and forecasts 1564
41.6	Future research needs 1568
Chapter 41 Physical climatology 1555	1555
42.1	Atmospheric moisture and clouds 1595
42.2	Life cycle of depressions 1598
42.3	Decadal variation in the Antarctic 1600
42.4	Clouds 1603
42.5	Publication of observational surfaces and forecasts 1604
42.6	Future research needs 1608
Chapter 42 Physical climatology 1595	1595
43.1	Atmospheric moisture and clouds 1635
43.2	Life cycle of depressions 1638
43.3	Decadal variation in the Antarctic 1640
43.4	Clouds 1643
43.5	Publication of observational surfaces and forecasts 1644
43.6	Future research needs 1648
Chapter 43 Physical climatology 1635	1635
44.1	Atmospheric moisture and clouds 1675
44.2	Life cycle of depressions 1678
44.3	Decadal variation in the Antarctic 1680
44.4	Clouds 1683
44.5	Publication of observational surfaces and forecasts 1684
44.6	Future research needs 1688
Chapter 44 Physical climatology 1675	1675
45.1	Atmospheric moisture and clouds 1715
45.2	Life cycle of depressions 1718
45.3	Decadal variation in the Antarctic 1720
45.4	Clouds 1723
45.5	Publication of observational surfaces and forecasts 1724
45.6	Future research needs 1728
Chapter 45 Physical climatology 1715	1715
46.1	Atmospheric moisture and clouds 1755
46.2	Life cycle of depressions 1758
46.3	Decadal variation in the Antarctic 1760
46.4	Clouds 1763
46.5	Publication of observational surfaces and forecasts 1764
46.6	Future research needs 1768
Chapter 46 Physical climatology 1755	1755
47.1	Atmospheric moisture and clouds 1795
47.2	Life cycle of depressions 1798
47.3	Decadal variation in the Antarctic 1800
47.4	Clouds 1803
47.5	Publication of observational surfaces and forecasts 1804
47.6	Future research needs 1808
Chapter 47 Physical climatology 1795	1795
48.1	Atmospheric moisture and clouds 1835
48.2	Life cycle of depressions 1838
48.3	Decadal variation in the Antarctic 1840
48.4	Clouds 1843
48.5	Publication of observational surfaces and forecasts 1844
48.6	Future research needs 1848
Chapter 48 Physical climatology 1835	1835
49.1	Atmospheric moisture and clouds 1875
49.2	Life cycle of depressions 1878
49.3	Decadal variation in the Antarctic 1880
49.4	Clouds 1883
49.5	Publication of observational surfaces and forecasts 1884
49.6	Future research needs 1888
Chapter 49 Physical climatology 1875	1875
50.1	Atmospheric moisture and clouds 1915
50.2	Life cycle of depressions 1918
50.3	Decadal variation in the Antarctic 1920
50.4	Clouds 1923
50.5	Publication of observational surfaces and forecasts 1924
50.6	Future research needs 1928
Chapter 50 Physical climatology 1915	1915
51.1	Atmospheric moisture and clouds 1955
51.2	Life cycle of depressions 1958
51.3	Decadal variation in the Antarctic 1960
51.4	Clouds 1963
51.5	Publication of observational surfaces and forecasts 1964
51.6	Future research needs 1968
Chapter 51 Physical climatology 1955	1955
52.1	Atmospheric moisture and clouds 1995
52.2	Life cycle of depressions 1998
52.3	Decadal variation in the Antarctic 2000
52.4	Clouds 2003
52.5	Publication of observational surfaces and forecasts 2004
52.6	Future research needs 2008
Chapter 52 Physical climatology 1995	1995
53.1	Atmospheric moisture and clouds 2035
53.2	Life cycle of depressions 2038
53.3	Decadal variation in the Antarctic 2040
53.4	Clouds 2043
53.5	Publication of observational surfaces and forecasts 2044
53.6	Future research needs 2048
Chapter 53 Physical climatology 2035	2035
54.1	Atmospheric moisture and clouds 2075
54.2	Life cycle of depressions 2078
54.3	Decadal variation in the Antarctic 2080
54.4	Clouds 2083
54.5	Publication of observational surfaces and forecasts 2084
54.6	Future research needs 2088
Chapter 54 Physical climatology 2075	2075
55.1	Atmospheric moisture and clouds 2115
55.2	Life cycle of depressions 2118
55.3	Decadal variation in the Antarctic 2120
55.4	Clouds 2123
55.5	Publication of observational surfaces and forecasts 2124
55.6	Future research needs 2128
Chapter 55 Physical climatology 2115	2115
56.1	Atmospheric moisture and clouds 2155
56.2	Life cycle of depressions 2158
56.3	Decadal variation in the Antarctic 2160
56.4	Clouds 2163
56.5	Publication of observational surfaces and forecasts 2164
56.6	Future research needs 2168
Chapter 56 Physical climatology 2155	2155
57.1	Atmospheric moisture and clouds 2195
57.2	Life cycle of depressions 2198
57.3	Decadal variation in the Antarctic 2200
57.4	Clouds 2203
57.5	Publication of observational surfaces and forecasts 2204
57.6	Future research needs 2208
Chapter 57 Physical climatology 2195	2195
58.1	Atmospheric moisture and clouds 2235
58.2	Life cycle of depressions 2238
58.3	Decadal variation in the Antarctic 2240
58.4	Clouds 2243
58.5	Publication of observational surfaces and forecasts 2244
58.6	Future research needs 2248
Chapter 58 Physical climatology 2235	2235
59.1	Atmospheric moisture and clouds 2275
59.2	Life cycle of depressions 2278
59.3	Decadal variation in the Antarctic 2280
59.4	Clouds 2283
59.5	Publication of observational surfaces and forecasts 2284
59.6	Future research needs 2288
Chapter 59	

**Chapter 4 The large-scale circulation of the Antarctic atmosphere 142**

- 4.1 Introduction 142
- 4.2 The heat budget 143
- 4.3 Atmospheric circulation and the vorticity budget 154
- 4.4 The water vapour budget 168
- 4.5 Representation of the Antarctic atmosphere in general circulation models 178

**Chapter 5 Synoptic-scale weather systems and fronts 185**

- 5.1 Introduction 185
- 5.2 The role of depressions 188
- 5.3 Depressions in the Antarctic and over the Southern Ocean 190
- 5.4 Climatology 222
- 5.5 Preparation of operational analyses and forecasts 246
- 5.6 Future research needs 265

**Chapter 6 Mesoscale systems and processes 267**

- 6.1 Local wind systems 267
- 6.2 Internal gravity waves 284
- 6.3 The atmospheric boundary layer 290
- 6.4 Blowing snow 301
- 6.5 Mesocyclones 307

**Chapter 7 Climate variability and change 341**

- 7.1 Variations in the historical climate record 342
- 7.2 Interactions with the tropical and mid-latitude circulation 353
- 7.3 Future climate predictions – Antarctica in a ‘greenhouse’ climate 369

**Appendix A** *A chronological list of stations that have made multi-year meteorological observations in the Antarctic and on the sub-Antarctic islands 374*

**Appendix B** *A chronological list of automatic weather stations that have been deployed in the Antarctic and on the sub-Antarctic Islands 380*

*References 386*

*Index 405*