



Technical Report 14-09

Weather observations from Tórshavn, The Faroe Islands

1953-2013

- Observation data with description

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Geituskoradrangur near Bøsdalafossur on Vagar, seen towards WNW, 11 September 2002. Photo: Juncher Jensen, DMI.



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Abstract

The purpose of this report is to present DMI weather observations 1958-2013 from Tórshavn, The Faroe Islands, that are accessible to the public. One data series are attached as a separated file.

Resumé

Formålet med denne rapport er at præsentere DMI vejrobservationer 1958-2013 fra Tórshavn, Færøerne, som er tilgængelige for offentligheden. En dataserie er vedhæftet som en individuel fil.



1. Introduction

The Danish Meteorological Institute has not previously published weather observations from Tórshavn, but large parts of this dataset have primarily been used for research and educational purposes and as background for data analysis as in The Faroe Islands climatological standard normal (DMI Technical Report 98-14 [1]) and the DMI historical climate data collection – the Faroe Islands (DMI Technical Report 14-05 [2]).

By publishing this DMI Technical Report 14-09 weather observation from Tórshavn in the period 1953-2013 for the first time become accessible to the public.

A comprehensive quality control has been applied to the whole dataset and erroneous data were removed. It must be stressed that the data series in question not at all have been tested for homogeneity nor homogenized.

One station, Tórshavn, with 10 parameters is included as a dataset in this report.

A similar report with Greenlandic weather observations 1958-2013 can be found in [3].

2. Description of the data

2.1 Synoptic stations

Synoptic stations at the Faroe Islands such as Tórshavn have been operated with different degrees of automation over time which has had consequences for the way parameters are observed and for the quality of data series.

Time stamps

The station Tórshavn included in the dataset is a synoptic station. Synoptic stations (or SYNOP-station) all over the world follow at least a 3-hour interval (00, 03, 06, 09, 12, 15, 18 and 21 hours UTC).

Since 1 December 1992 an introduction of 1-hour interval began (00, 03, 06, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 22, 23 hours UTC). Since 16 March 1995 observations 04 and 05 hours UTC were added. Since 1 November 1998 observations every whole hour UTC the clock around can be found.

Synoptic stations always follow the same guidelines¹. In Appendix 2 it is indicated which observations from Tórshavn are 3-hourly or hourly.

Parameters

A synoptic station should observe as standard *weather, cloud cover, visibility, snow cover, air temperature, relative humidity, wind, air pressure* and *precipitation*. The selected parameters in the current DMI Tórshavn dataset are given in table 1.

Station identification

The official station numbers describing synoptic stations at The Faroe Islands consist of 5 digits, always starting with 06. However, in the data series the “0” is omitted.

¹ See more at <http://www.wmo.int>

2.2 Stations and data series

The position of weather station Tórshavn can be seen in figure 1. The station details and its coordinates are furthermore listed in appendix 1.

A complete visual overview of the data series can be seen in appendix 2, where all parameters are shown with data series length. One cell equals one data year. A data year is one year in one data series for one parameter, so the total number of data years is the length of all data series aggregated. The number of data years for the station is shown in the left upper corner of the overview.

Please notice that each cell represents one year of data regardless of the amount of data in this year. Hence data years do not necessarily correspond to a calendar year of data.

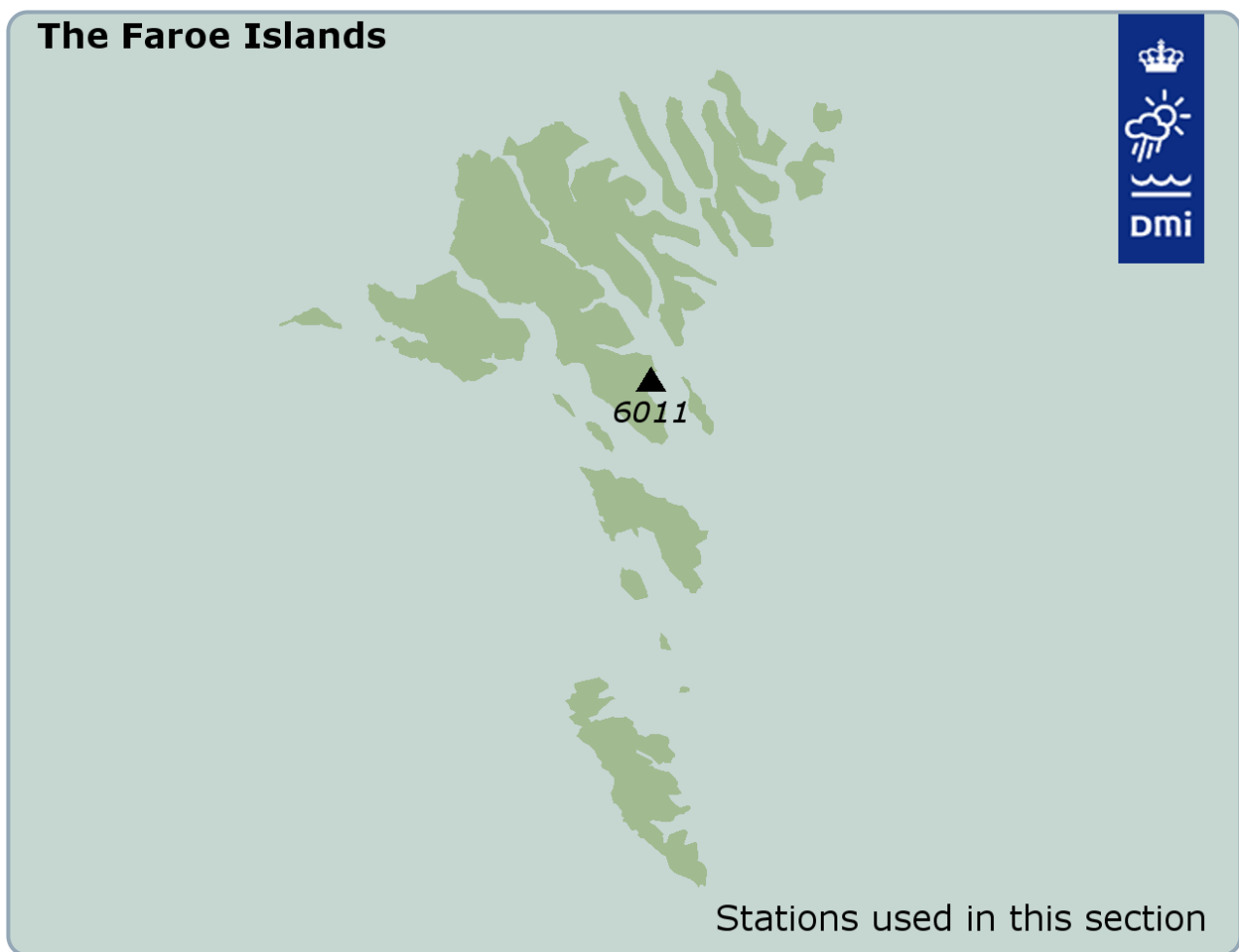


Figure 1: Station position, 6011 Tórshavn, The Faroe Islands.

3. Data format

The data series are available as tabulator a separated txt-file and are found in one ZIP-compressed file *tr14-09.zip* attached to this report. The ZIP-file contains 1 txt-file representing all data from the station. All time stamps are given in UTC time. Each column in the txt-files has a header, which is described in table 1.

Headers in synoptic data series-files

Column title	Description
stat_no	4 digit station number in the format '6xxx'
Year	Year of observation
Month	Month of observation
Day	Day of observation
hour	Hour of observation (UTC)
dd	Mean wind direction over the 10-minute period preceding the observation. In 1 or 10-degree intervals. 0 applies to calms. 999 applies to variable wind directions
ff	Mean wind speed over the 10-minute period preceding the observation. Observations given in 0.1 m/s
n	Cloud cover in octas (0/8 clear sky, 8/8 overcast). 9 apply to obscured sky, due to fog or heavy snow, and therefore no available observation
pppp	Air pressure at mean sea level in 0.1 hPa
ttt	Dry bulb temperature in 0.1 degrees centigrade
txtxtx	Absolute maximum temperature in 0.1 degrees centigrade. Observation period depends on the interval of SYNOP time intervals, normally 12 hours at 6 and 18 hours UTC
tnntn	Absolute minimum temperature in 0.1 degrees centigrade. Observation period depends on the interval of SYNOP time intervals, normally 12 hours at 6 and 18 hours UTC
rh	Relative humidity in percent
rrr6	6, 12 or 24 hours accumulated precipitation in 0.1 mm. -1 applies to more than 0 mm, but less than 0.1 mm. Normally 6 and 18 hours UTC cover 12 hours; 0 and 12 hours UTC cover 6 hours. If there is only one observation every day it is expected to cover 24 hours
sss	Snow depth in cm. 997 applies to less than 0.5 cm. 998 applies to snow cover not continuous

Table 1. Description of columns in the synoptic data series. Parameters given in 0.1-values (*ff*, *pppp*, *ttt*, *txtxtx*, *tnntn* and *rrr6*) are to be divided with 10 to obtain the actual value. **Remember that in order to obtain i.e. daily acc. precipitation, you cannot just add precipitation using the observations at 0, 6, 12 and 18 hours UTC. The precipitation at 0 and 12 hours UTC cover 6 hours; precipitation at 6 and 18 hours UTC cover 12 hours and therefore the precipitation at 0 and 12 hours UTC are imbedded in the precipitation at 6 and 18 hours UTC.**

Note 1 Relative humidity:

- 1) In periods it is evident that the relative humidity at 6011 Tórshavn is characterized by different instruments and calibrations. These periods are not excluded in the data series, but care should be taken when using the data in these periods.
- 2) Some relative humidity values above 100% are changed (not excluded) to 100%, when it was evident, that this was OK.

Note 2 Snow depth:

- 1) 6011 Tórshavn has observed snow depth in the period 18 January 1955 12UTC – 9 April 2006 06UTC. The observations are however sparse and some observations have been changed (not excluded) in this report, when it was evident, that it should have been divided by 10. For a more continuous series of snow depth very near to Tórshavn, please check the climate station 33060 Hoyvik in different yearbooks [4] or in the DMI climate database.

References

[1] Cappelen, J. & Laursen, E.V. (1998): The Climate of the Faroe Islands – with Climatological Standard Normals, 1961-1990. DMI Technical Report 98-14. Copenhagen.

[2] Cappelen, J. (ed) (2014): The Faroe Islands – DMI Historical Climate Data Collection 1873-2013 –with Danish Abstracts. DMI Technical Report 14-05. Danish Meteorological Institute. Copenhagen.

[3] Cappelen, J. (ed) (2014): Weather observations from Greenland 1958-2013 – Observation data with description. DMI Technical Report 14-08. Danish Meteorological Institute. Copenhagen.

[4] 1873-1983 “Meteorologisk Årbog”

From the start of the institute start year books have been published with varying content and size. A principal rule is that these publications contain descriptions, surveys and observations. The Faroe Islands is included in the following parts of “Meteorologisk Årbog”:

1873	Joint volume: Denmark, Greenland and the Faroe Islands, supplement 1868-1872
1874-1919	Part 2 (The Faroe Islands, Greenland and other colonies)
1920-1960	Part 1 (Denmark and The Faroe Islands) + Part 2 (Greenland)
1961-1970	Part 1 (Denmark and The Faroe Islands)
1971-1975	Not published
1976	Part 1 (Denmark and The Faroe Islands)
1977-1978	Not published
1979-1983	Part 1 (Denmark and The Faroe Islands)

1872-1895 ”*Meteorologiske Middeltal og Ekstremer for Færøerne, Island og Grønland. Appendix til det danske meteorologiske Instituts Aarbog 1895, II.del*”, published 1899
Additionally a joint volume for the years 1872-1895 was published in 1899.

1940-1945 *Meteorologisk Årbog - Tillæg - Færøerne 1940-45*
Additionally a joint volume for the years 1872-1895 was published in 1899.

Previous reports

Previous reports from the Danish Meteorological Institute can be found on:

<http://www.dmi.dk/laer-om/generelt/dmi-publikationer/>



Appendix 1 – Station details

Abbreviations - DMI: Danmarks Meteorologisk Institut (Danish Meteorological Institute).

	Owner	Time of operation		Latitude N		Longitude W		Elevation m.a.s.
		start	stop	degrees	minute	degrees	minute	
6011 Tórshavn	DMI	01-01-1953		62	01	06	46	54



Appendix 2 – Overview of data series 6011 Tórshavn 1953-2013

Total number of data years		601																																					<<< Normal period 1961-1990 >>>										Years with data										Years with data (hourly observations)									
		1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013						
6011	dd																																																																			
	ff																																																																			
Tórshavn	n																																																																			
	pppp																																																																			
	iii																																																																			
	extxtx																																																																			
Data years 601	intmta																																																																			
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	rrr6																																																																			
	sss																																																																			