



Tarfala Research Station automatic weather station, 1990

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Contents

1	Instrumentation	3
2	Notes on the station data	3
3	Data coverage	3
4	Notes on data storage	3
5	Data files and content	3

1 Instrumentation

The TRS met station consisted of the following instruments during 1990

Sensor	Serial number	Remark
T/Rh		at 2 m
Young Wind Monitor		at 3 m
LiCor Li-200SB pyranometer		at 2 m
CS Q-7 net radiometer		at 2 m
Tipping bucket precipitation gauge		2 m
CR21X data logger		

2 Notes on the station data

- NOTE 3-hr sampling of data during winter, 1-hr sampling during summer.
- No daily output.
- Original logger files are missing and existing data files are based on processed data.

3 Data coverage

No data missing.

4 Notes on data storage

Example data line for hourly data:

1990,186,5,1300,9.3,48.4,1.8,1.8,338,5,1300,17,520.5,535.8,4.5,0,0

Column	Example data	Description
01:	1990	Year
02:	186	Day of Year
03:	5	Day of Month
04:	1300	Hour-minute (hhmm)
05:	9.3	2 Young screen (T/Rh)
06:	48.4	3 Young screen relative humidity (T/Rh)
07:	1.8	4 Wind speed
08:	1.8	5 Wind vector
09:	338	6 resultant mean wind vector direction
10:	5	Day of Month
11:	1300	Hour-minute (hhmm)
12:	17	7 Standard deviation of wind vector direction
13:	520.5	8 Global radiation
14:	535.8	9 Net radiation
15:	4.5	10 Standard deviation of net radiation
16:	0	11 Precipitation
17:	0	12 Max intensity precipitation

5 Data files and content

TRSmnet1990.csv Raw data file

TRS_met_1990_Precipitation.csv

Date-time, hourly totalized P, Precipitation intensity

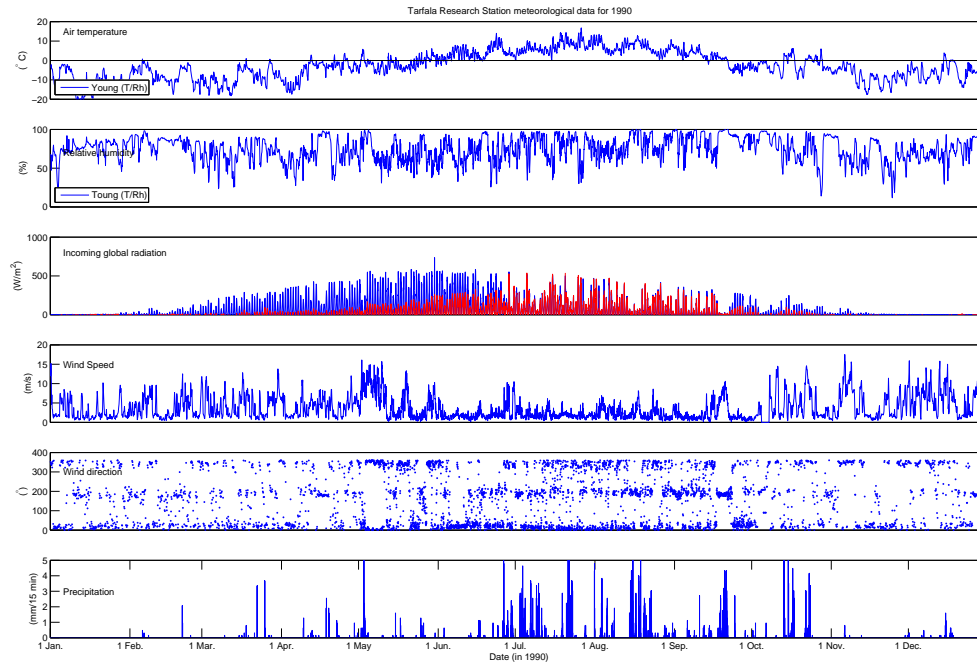


Figure. 1. Summary of meteorological data from Tarfala Research Station automatic weather station 1990.

1990-01-01 03:00:00,0.00,0.00

TRS_met_1990_Radiation.csv

Date-time, Global radiation, Net radiation, Standard deviation of net radiation?

1990-01-01 03:00:00,1.20,-8.60,4.20

TRS_met_1990_Relative_humidity.csv

Date-time, hourly average Rh

1990-01-01 03:00:00,68.4

TRS_met_1990_Temperature.csv

Date-time, hourly average T

1990-01-01 03:00:00,-3.60

TRS_met_1990_Wind.csv

Date-time, Mean horizontal wind speed, Resultant mean wind speed, resultant mean wind direction, Standard deviation of wind direction

1990-01-01 03:00:00,11.9,11.3,352.0

The data collected during 1990 is summarized the figure 1 and Table 1.

Logger program

No documentation of the logger program exists for this year.

Table. 1. Monthly averages of meteorological parameters from the Tarfala Research Station automatic weather station 1990.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Average air temperature												
(°C)	−11.6	−7.4	−9.1	−5.3	−1.7	3.8	7.3	6.8	1.1	−2.1	−8.3	−6.4
<i>n</i>	247	223	255	247	743	743	743	767	743	271	247	255
Average relative humidity												
(%)	74.4	82.5	69.1	68.5	68.1	70.2	78.6	79.7	87.1	77.9	66.2	73.4
<i>n</i>	247	223	255	247	743	743	743	767	743	271	247	255
Positive degree sum												
(°C)	0	1	2	31	386	2859	5397	5238	1701	155	0	20
<i>n</i>	0	1	3	18	193	683	742	767	494	69	0	12
Average incoming global radiation												
(W m ^{−2})	2.4	11.4	54.9	110.6	162.3	166.7	102.0	72.1	42.7	25.5	4.7	1.6
<i>n</i>	247	223	255	247	743	743	743	767	743	271	247	255
Global incoming energy sum												
(W m ^{−2})	586	2536	14002	27322	120612	123848	75798	55331	31724	6923	1162	418
<i>n</i>	247	223	255	247	743	743	743	767	743	271	247	255
Average net radiation												
(W m ^{−2})	−2585	−1456	−1392	789	24438	56230	61309	41716	14118	−1058	−3061	−2037
<i>n</i>	247	223	255	247	743	743	715	756	743	271	247	255
Totalized precipitation												
(mm)	0.00	4.32	10.24	15.68	37.28	59.36	207.20	165.76	134.40	79.04	2.08	8.80
<i>n</i>	247	223	255	247	743	743	743	767	743	271	247	255
Average wind speed												
(m s ^{−1})	2.9	3.6	4.5	4.0	5.2	2.3	2.0	2.3	2.4	3.7	4.5	5.5
<i>n</i>	247	223	255	247	743	743	743	767	743	271	247	255