



Tarfala Research Station automatic weather station, 1992

Peter Jansson

Contents

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

1 Instrumentation

The TRS met station consisted of the following instruments during 1992

Sensor	Serial number	Remark
Pt100		in Stevenson screen
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		at 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

- wind data missing from
1992-02-07 18:00:00
1992-05-02 20:00:00 to 1992-05-03 03:00:00
1992-05-06 00:00:00 to 1992-05-06 05:00:00
1992-07-02 04:00:00 to 1992-07-02 05:00:00
1992-07-07 14:00:00
1992-07-08 02:00:00
- Relative humidity data is missing from
1992-07-07 15:00:00
1992-07-08 03:00:00
- Radiation data (mostly net radiation) is missing from
1992-01-10 18:00:00
1992-02-07 18:00:00
1992-06-15 12:00:00
1992-06-16 11:00:00
1992-06-16 11:00:00
1992-06-17 11:00:00 to 1992-06-17 14:00:00
1992-06-18 11:00:00 to 1992-06-18 12:00:00
1992-06-21 12:00:00
1992-06-22 13:00:00 to 1992-06-22 15:00:00
1992-06-23 13:00:00 to 1992-06-23 15:00:00
1992-06-28 12:00:00
1992-06-29 10:00:00 to 1992-06-29 13:00:00
1992-07-01 12:00:00 to 1992-07-01 13:00:00
1992-07-02 11:00:00 to 1992-07-02 15:00:00
1992-07-11 13:00:00
1992-07-14 13:00:00
1992-07-18 12:00:00 to 1992-07-18 13:00:00
1992-07-19 13:00:00 to 1992-07-19 14:00:00
1992-07-21 12:00:00 to 1992-07-21 14:00:00
1992-07-24 13:00:00

1992-07-28 11:00:00 to 1992-07-28 12:00:00
 1992-07-29 13:00:00
 1992-08-03 12:00:00

- Precipitation data missing from
 1992-02-07 18:00:00
 1992-12-04 06:00:00
 1992-12-11 15:00:00
- Temperature data missing from
 1992-07-08 05:00:00

4 Notes on data storage

Example data line for hourly data:

1992,185,1300,4.365,4.395,32.29,2.409,2.282,5.445,18.62,330.7,315.8,0,0

Column	Example data	Description
01:	1992	Year
02:	185	Day of Year
03:	1300	Hour-minute (hhmm)
04:	4.365	2 Pt100 T in Stevenson screen)
05:	4.395	3 T in Young screen
06:	32.29	4 Rh in Young screen
07:	2.409	5 Mean horizontal wind speed
08:	2.282	6 Resultant mean wind speed
09:	5.445	7 resultant mean wind direction
10:	18.62	8 Standard deviation of wind direction
11:	330.7	9 Global radiation
12:	315.8	10 net radiation
13:	0	11 Precipitation
14:	0	12 Precipitation intensity

5 Data files and content

TRSmnet1992.csv Raw data file

TRS_met_1992_Precipitation.csv

Date-time, hourly totalized P

1992-01-01 03:00:00,0.00,0.00

TRS_met_1992_Radiation.csv

Date-time, Global radiation, Net radiation

1992-01-01 03:00:00,1.3,-2.3

TRS_met_1992_Relative_humidity.csv

Date-time, hourly average Rh

1992-01-01 03:00:00,69.2

TRS_met_1992_Temperature.csv

Date-time, hourly average T (Stevenson), hourly average T (Young)

1992-01-01 03:00:00,-1.66,-1.71

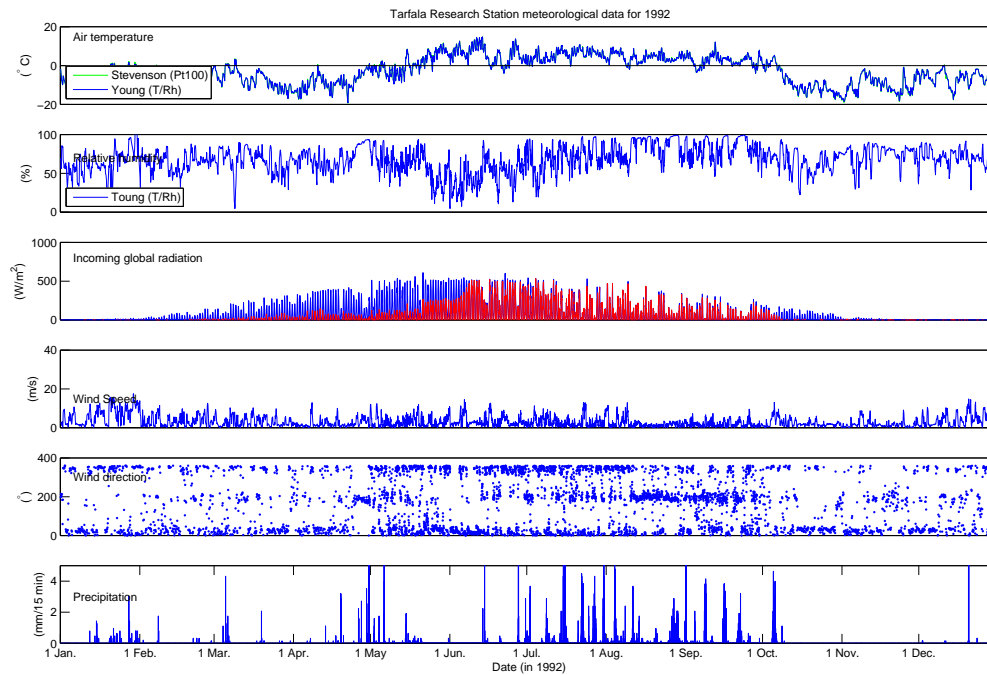


Figure. 1. Summary of meteorological data from Tarfala Research Station automatic weather station 1992.

TRS_met_1992_Wind.csv

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

1992-01-01 03:00:00,4.6,2.3,197.8,56.4

The data collected during 1992 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 1992.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Average air temperature (Stevenson)												
(°C)	−7.0	−7.5	−7.0	−8.5	0.8	5.7	5.5	4.2	2.7	−8.2	−10.3	−6.1
<i>n</i>	247	231	255	263	743	743	742	767	727	255	247	255
Average air temperature												
(%)	−7.0	−7.5	−7.0	−8.4	0.7	5.7	5.5	4.2	2.6	−8.1	−10.2	−6.0
<i>n</i>	247	231	255	263	743	743	743	767	727	255	247	255
Average relative humidity												
(°C)	66.1	64.3	65.7	71.0	60.2	48.3	69.1	82.8	81.9	64.7	73.5	70.3
<i>n</i>	247	231	255	263	743	743	741	767	727	255	247	255
Positive degree sum												
(°C)	10	0	15	4	1764	4304	4070	3218	2108	101	0	0
<i>n</i>	17	1	15	6	375	662	734	740	603	40	0	1
Average incoming global radiation												
(W m ^{−2})	2.6	14.2	52.7	105.8	171.0	185.7	118.4	68.1	44.1	27.0	3.7	1.7
<i>n</i>	246	230	255	263	743	743	743	767	727	255	247	255
Global incoming energy sum												
(W m ^{−2})	—	—	13450	27821	127040	138005	87985	52267	32028	6873	940	435
<i>n</i>	246	230	255	263	743	743	743	767	727	255	246	254
Average net radiation												
(W m ^{−2})	−3365	−2780	−938	2885	35662	95876	70063	44339	19999	−2277	−1293	−1639
<i>n</i>	247	230	255	263	743	723	723	766	727	255	247	255
Totalized precipitation												
(mm)	107.52	46.08	42.24	97.92	155.52	178.56	622.08	547.20	380.16	51.84	0.00	142.08
<i>n</i>	247	230	255	263	743	743	743	767	727	255	247	253
Average wind speed												
(m s ^{−1})	7.4	4.8	3.9	2.9	3.8	3.9	3.4	2.6	2.3	2.9	2.3	5.1
<i>n</i>	247	230	255	263	729	743	741	767	727	255	247	255