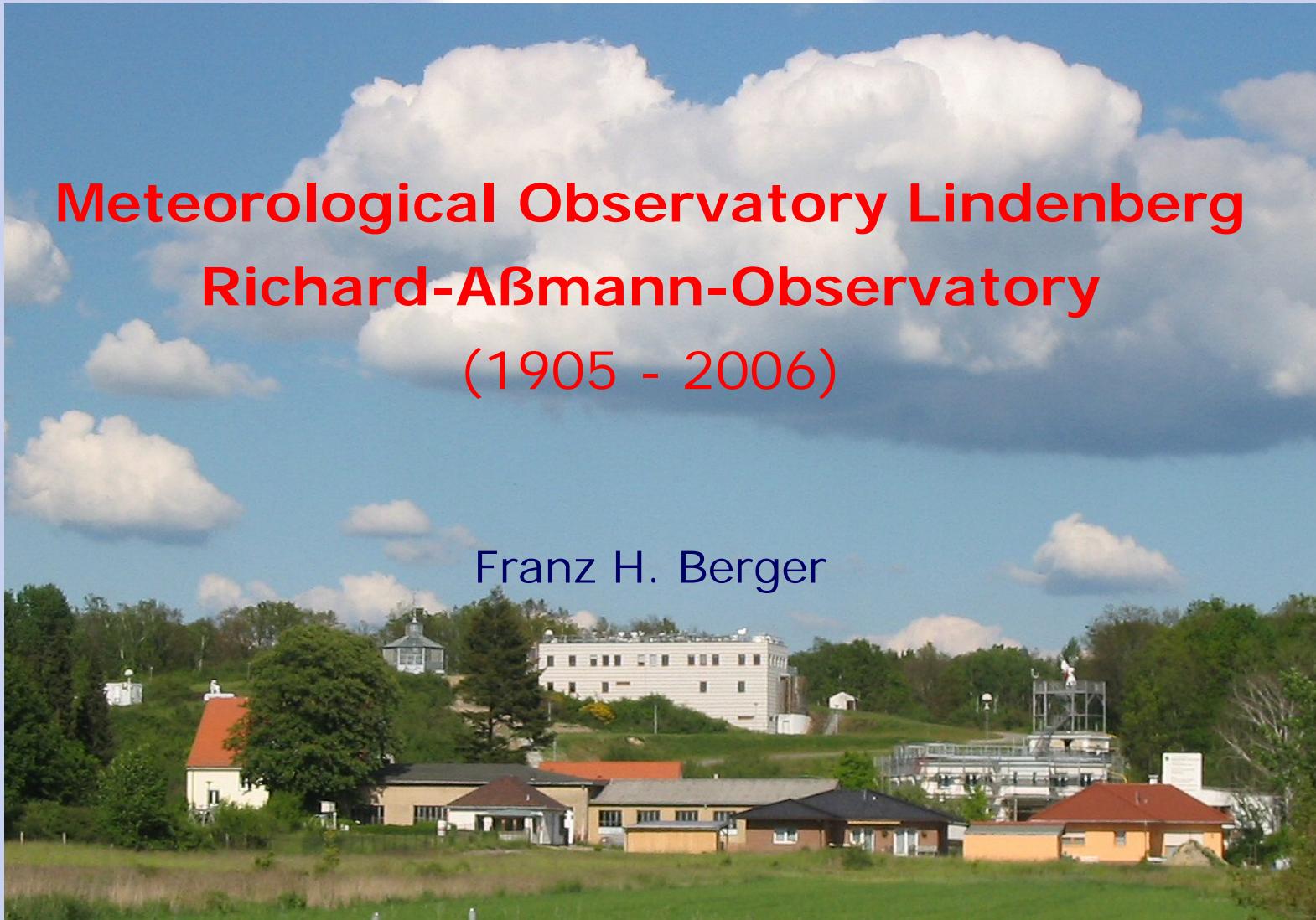


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Meteorological Observatory Lindenberg – Richard-Aßmann-Observatory

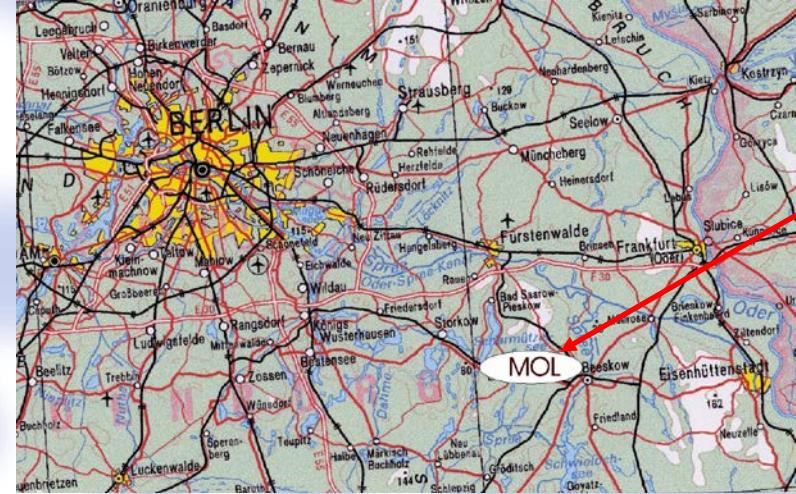
Meteorological Observatory Lindenberg Richard-Aßmann-Observatory (1905 - 2006)

Franz H. Berger



Deutscher Wetterdienst

Meteorological Observatory Lindenberg – Richard-Aßmann-Observatory

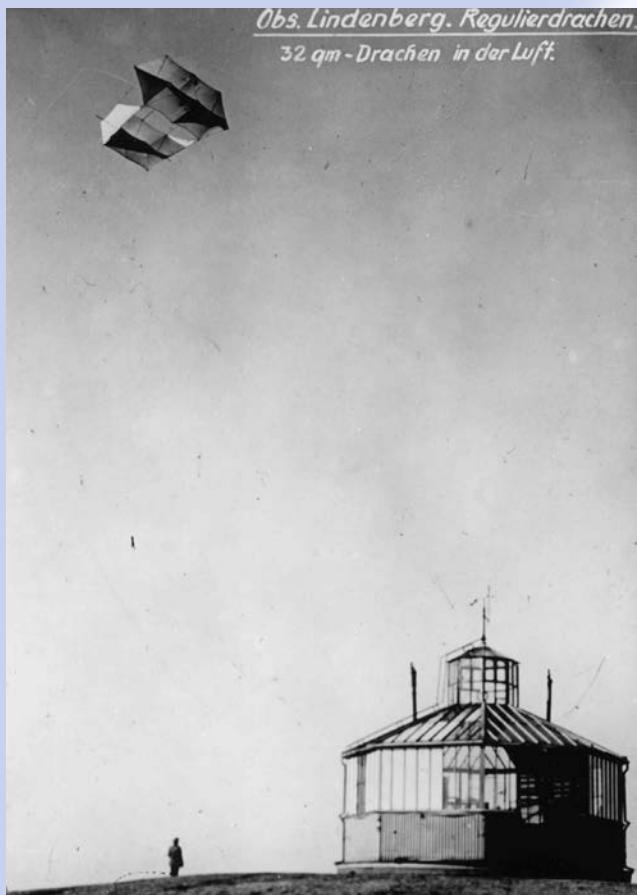


Meteorological Observatory Lindenberg Richard-Aßmann-Observatory

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Measurements 1905-1932 at Aeronautical Observatory Lindenberg



Am Aeronautischen Observatorium Lindenber (1914—1931)
mit Fesselaufstiegen erreichte Höhen in m

Jahr	mit Drachen			mit Fesselballonen		
	Anzahl	max. Höhe	mittl. tägl. Höhe	Anzahl	max. Höhe	mittl. tägl. Höhe
1914	778	6200	3340	454	8000	3668
1915	701	5610	3517	439	5500	3089
1916	755	7500	3998	400	9200**	4332
1917	720	8240	4025	360	6500	4160
1918	703	7500	3661	312	3990	2869
1919	601	9750*	3811	182	5324	2484
1920	697	6700	3306	91	3950	2427
1921	711	5710	2968	30	2560	1867
1922	697	5860	2880	—	—	—
1923	630	4720	2560	55	4080	1677
1924	410	4660	2800	203	3260	2089
1925	456	4470	2488	166	4270	2462
1926	431	5403	2551	203	4788	2384
1927	461	4708	2535	222	4219	2182
1928	508	4260	2321	320	4070	2309
1929	703	5705	2308	220	4175	2567
1930	640	5865	2553	233	4421	2594
1931	609	5772	3030	142	4131	2385
1914-1931	11211			4032		

*) 1. 8. 1919 9750 m **kites**

& **) 26. 9. 1922 10000 m **balloons**

today's monitoring programme at Meteorological Observatory Lindenberg – Richard-Aßmann-Observatory

1. climate monitoring & model - process evaluation & satellite data evaluation → longterm - monitoring of atmospheric parameters applying robust techniques
2. supply of quality-controlled reference data sets - **3D/4D Lindenberg column** (BSRN, CEOP / COPES, GUAN, GSN, GVaP, GABLS, WinProf, CIMO, SUVMONET)
3. continuous scientific-technical research to optimise atmospheric observation
4. implementation of new measuring and interpretation techniques

Meteorological Observatory Lindenberg Richard-Aßmann-Observatory

RAO 1

Ground based
Remote Sensing

RAO 2

Landsurface
processes and
ABL

RAO 3

Lindenberg
Column

RAO 4

Radiation

- windprofiler/RASS
- cloud radar MIRA
- Raman-lidar RAMSES
- ceilometer (25/40)
- micro-rainradar
- FTIR EISAR
- microwave –
radiometer / profiler
- GPS
- tethered balloon

- ABL measuring site (GM) Falkenberg
- micrometeor.
measurements
- turbulence meas.
- scintillometry
- sodar / RASS
- soil measurements

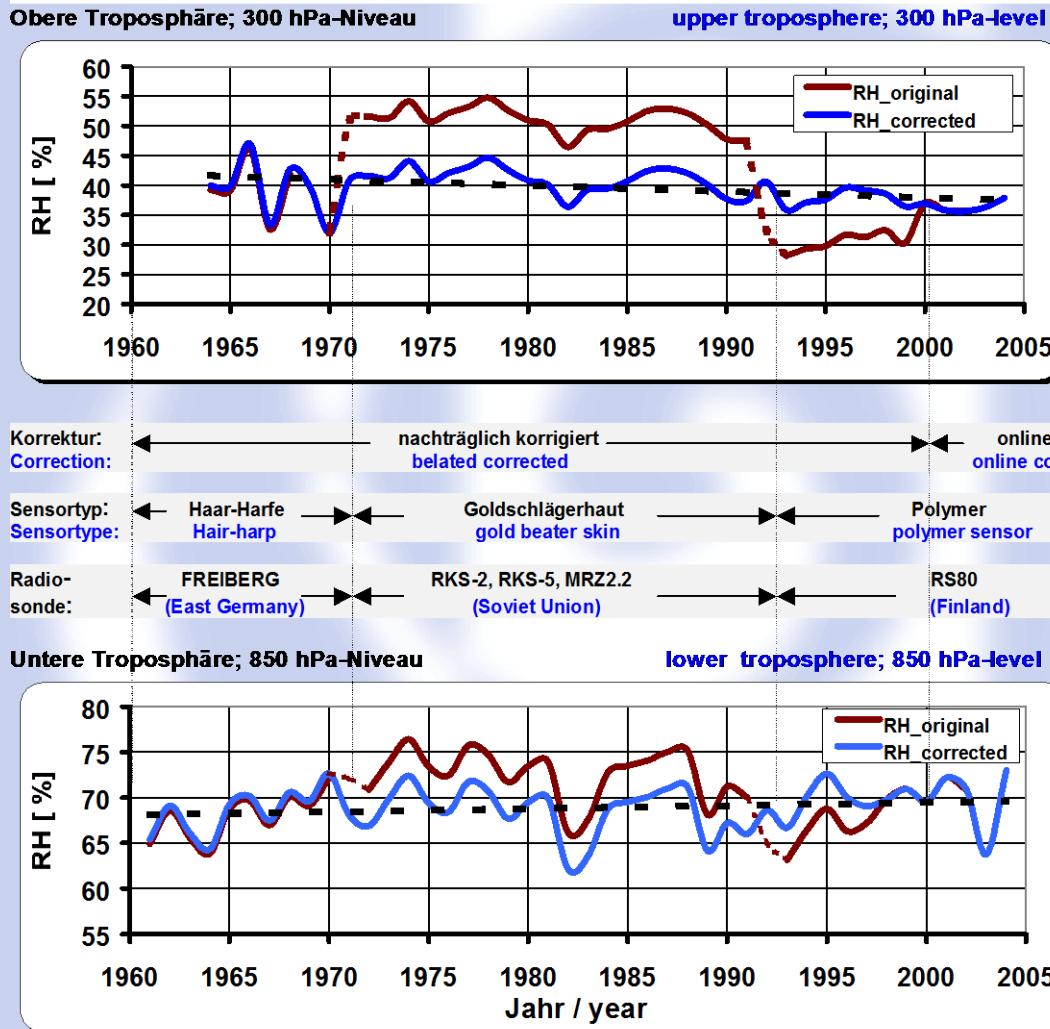
- routine 24 hrs.
weather observation
incl. every 6 hrs
radiosondes
- research FN and
ozone radiosonde -
weekly
- data base
- humidity / temp.
calibration
- model (process)
evaluation

- BSRN – station
(pyranometer, pyrgeom.,
SCAPP)
- radiation center WMO-
RA VI and national
radiation network
- UV / VIS spectrometer
- particle soot absorpt.
spectrometer
- whole sky imager
- scanning IR imager
- satellite analysis (MSG
SEVIRI, Metop IASI)

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Corrected relative humidity time series: Lindenberg (52,20N;14,12E)

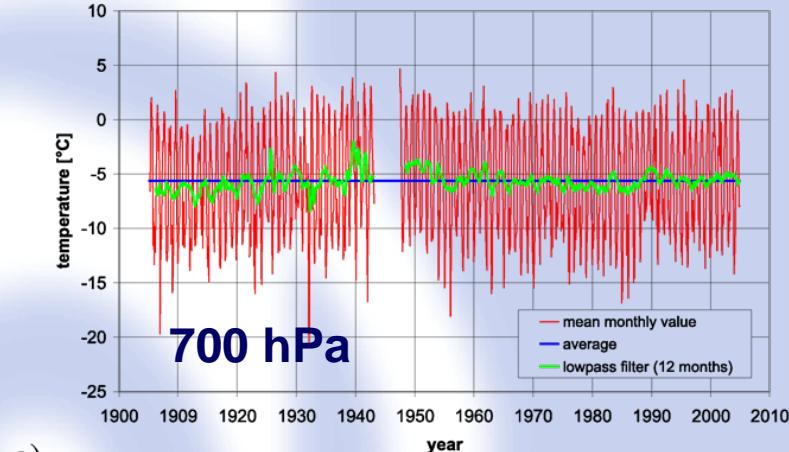
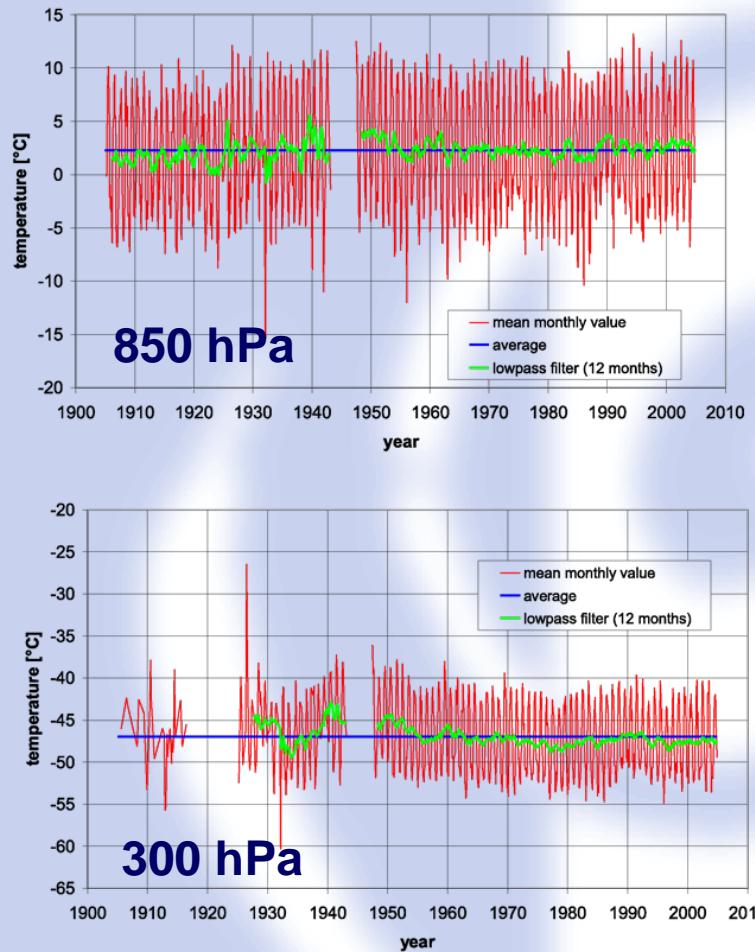


incl. calibration in a
climate chamber under
specific atmospheric
conditions:

P ... 10-1015 hPa
T ... -78°C – 40°C
RH... 0% til saturation

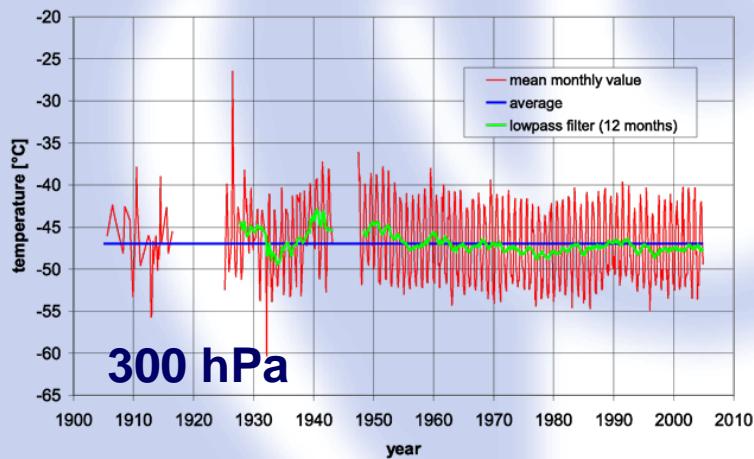
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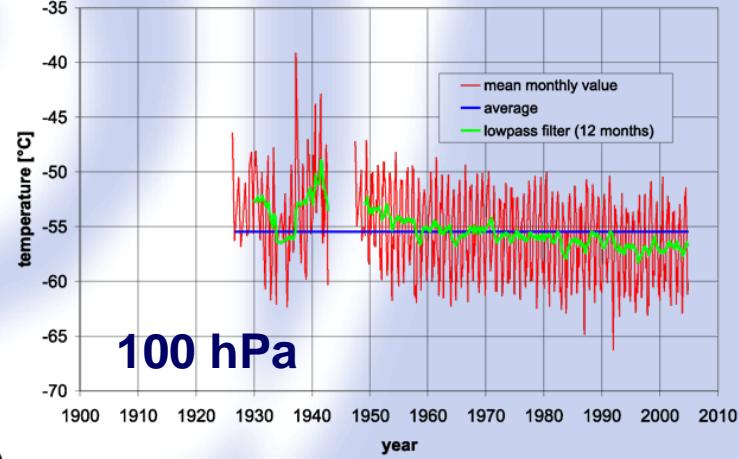


a)

b)



c)



d)

Figure 7: Monthly mean temperature at Lindenberg Observatory 1905–2005. Only months with at least 3 individual ascents available per month were entered. a) Temperature at 850 hPa, b) Temperature at 700 hPa, c) Temperature at 300 hPa, d) Temperature at 100 hPa.