Software solution for data quality control, homogenization and time series analysis

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Software package

- Originally created for homogeneity testing and time series analysis (trends, cycles, correlation analysis)
- Recently added functions for extreme values analysis (GEV, GPD), RCM outputs validation and correction, multivariate analysis (connection with R software), interpolations

http://www.climahom.eu

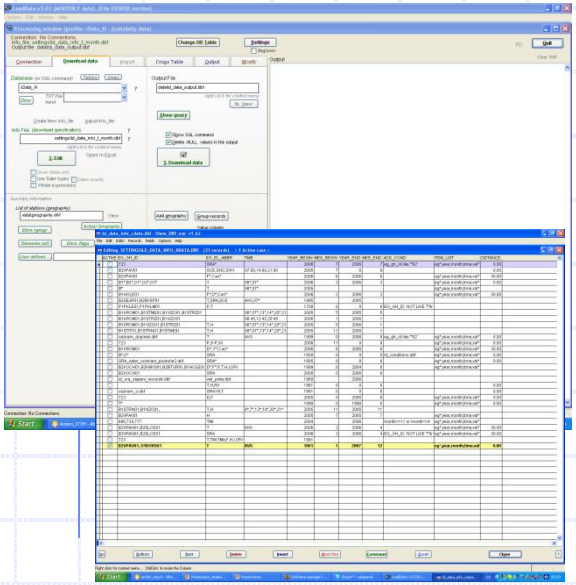
Software Package for Processing Climatological Data

- Application for downloading data from central database (e.g. Oracle)
- ProClimDB software for processing whole dataset (finding outliers, combining series, creating reference series, preparing data for homogeneity testing, analysis …)
- AnClim software for homogeneity testing and times series analysis – **education**

http://www.climahom.eu

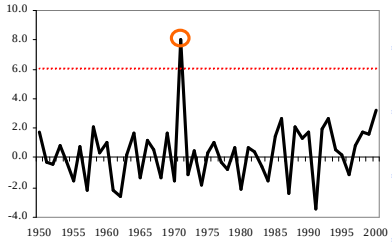
Download data from database (e.g. Oracle)

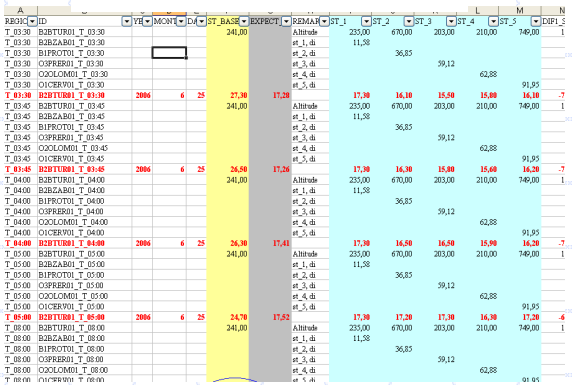
(LoadData)



Quality control

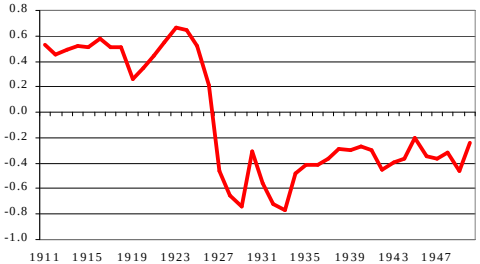
(ProClimDB)

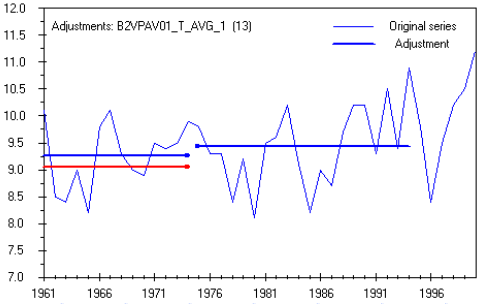




Homogenization

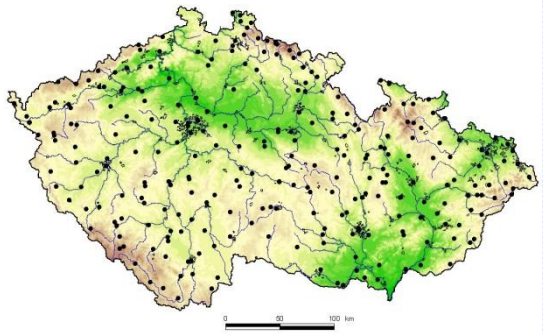
(ProClimDB/AnClim)

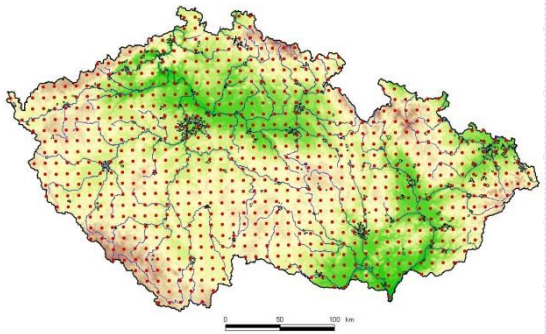




ĂTechnicalñ series and grid points calculation

(ProClimDB)





Statistical analysis

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(ProClimDB)

Validation of RCM outputs

(ProClimDB)

Extreme value analysis

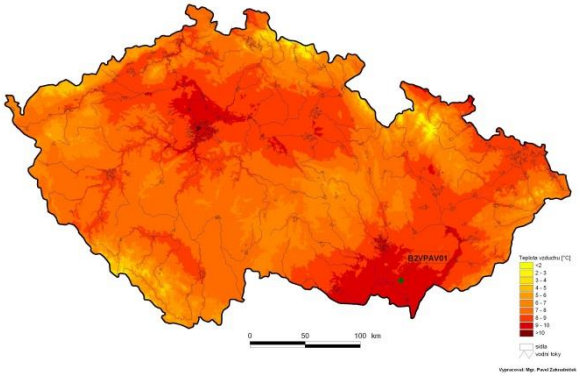
(ProClimDB)

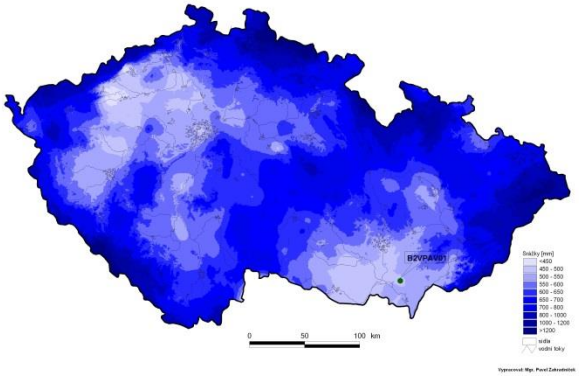
Correction of RCM outputs

(ProClimDB)

Spatial analysis

(connection ProClimDB - ArcView)

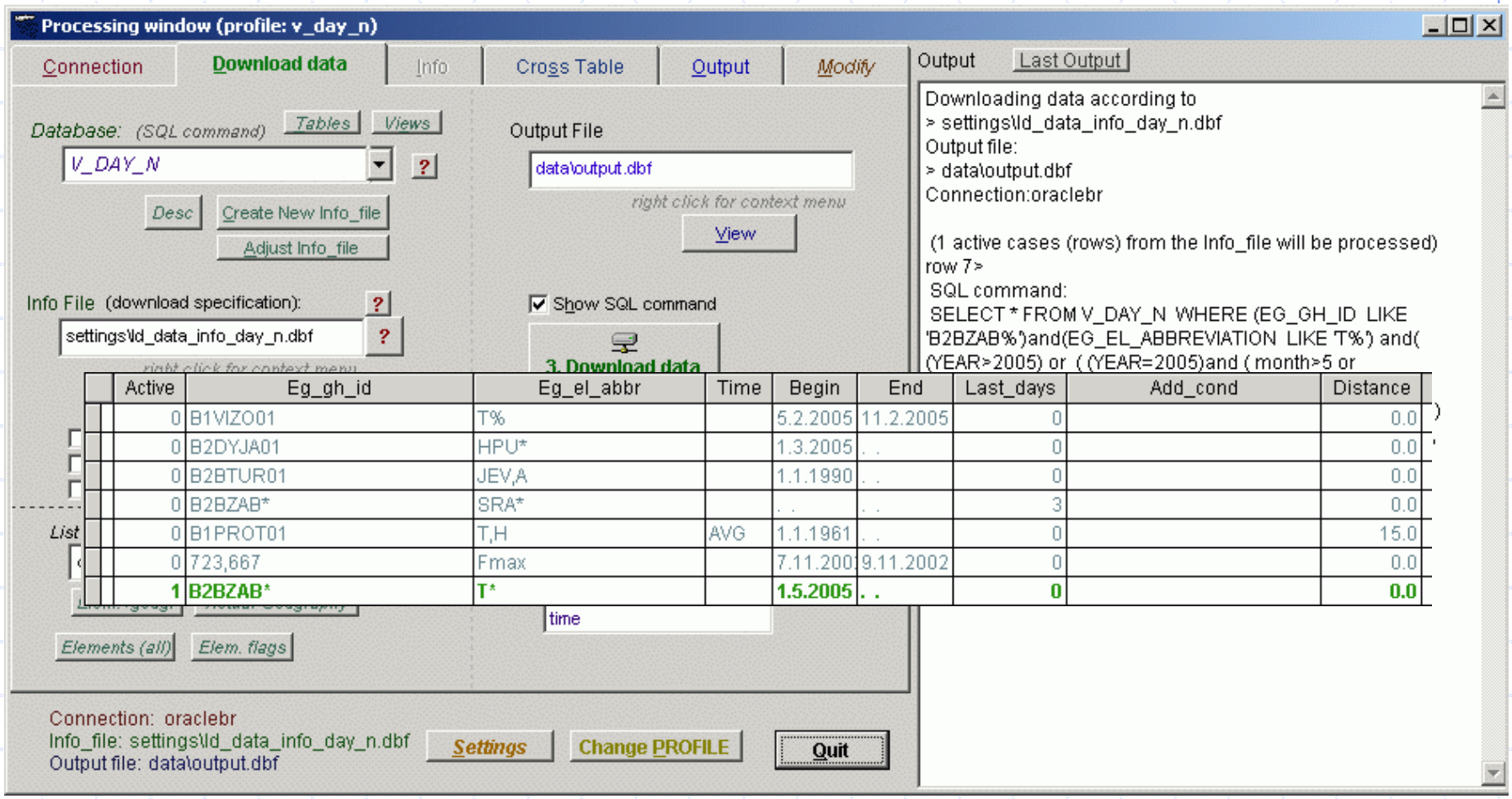




Further tools:

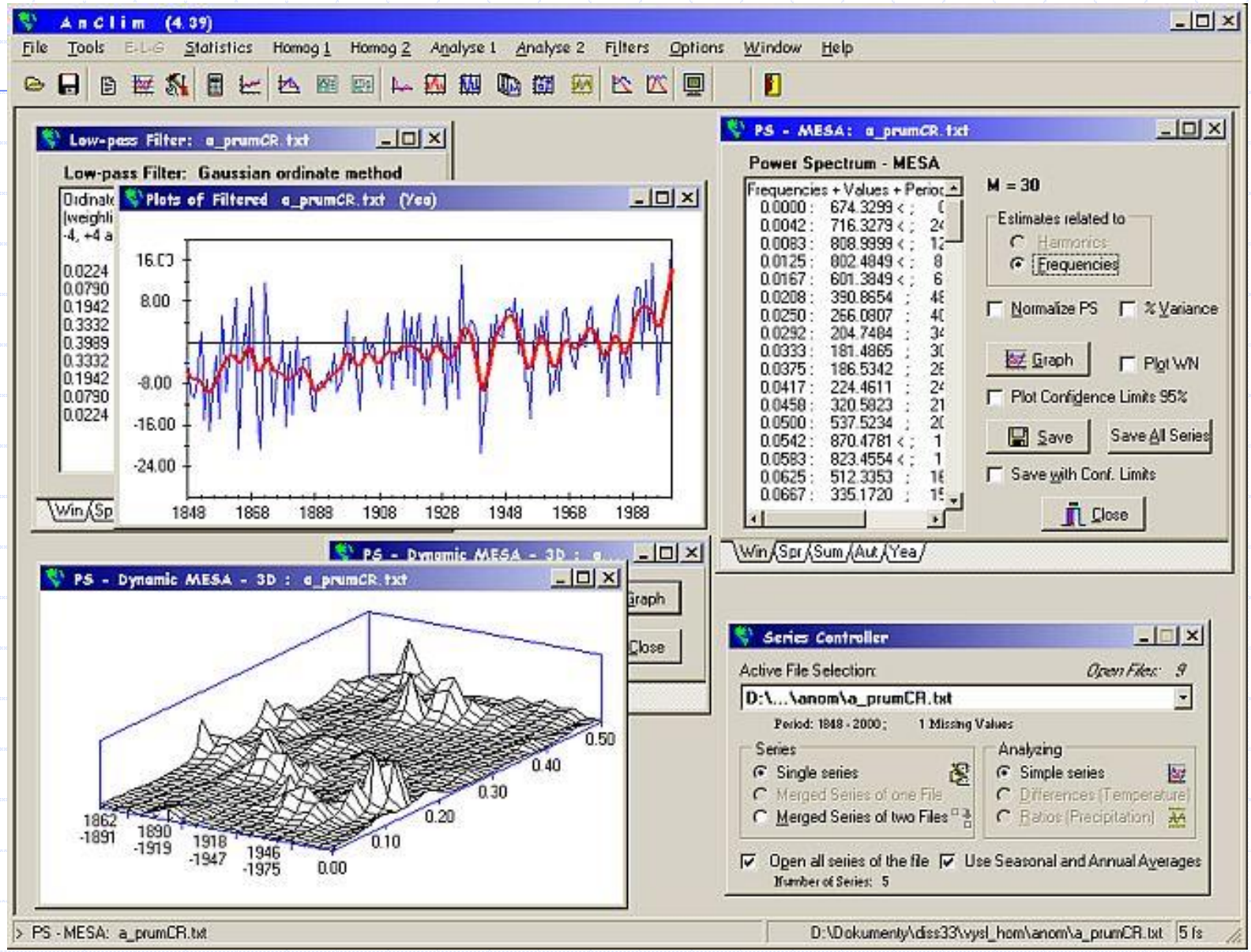
(connection ProClimDB - R)

LoadData software, SQL commands generator (based on given *Database Table* and *Info_file*)



AnClim software, TXT files (each station has its own text file)

Monthly (seasonal, annual) or **daily** data processing
conveniant for learning of statistical methods in climatology (tutorials)



Examples of Data formats – AnClim, monthly data

Edit precip_bohemia.txt

1876	19.0	78.0	76.0	37.0	42.0	69.0	55.0	60.0	91.0	16.0	39.0	50.0	632.0
1877	56.0	76.0	46.0	30.0	50.0	43.0	100.0	62.0	53.0	24.0	32.0	41.0	613.0
1878	48.0	19.0	82.0	52.0	68.0	49.0	69.0	88.0	46.0	49.0	37.0	30.0	637.0
1879	29.0	52.0	33.0	49.0	70.0	114.0	86.0	78.0	40.0	36.0	63.0	29.0	679.0
1880	32.0	22.0	34.0	48.0	114.0	82.0	93.0	117.0	53.0	85.0	41.0	98.0	819.0
1881	13.0	20.0	72.0	28.0	88.0	93.0	79.0	98.0	77.0	52.0	18.0	24.0	662.0
1882	14.0	25.0	23.0	55.0	84.0	87.0	139.0	109.0	84.0	52.0	85.0	73.0	830.0
1883	31.0	19.0	33.0	18.0	33.0	123.0	110.0	50.0	66.0	36.0	24.0	59.0	602.0
1884	44.0	12.0	40.0	27.0	32.0	121.0	84.0	60.0	36.0	104.0	36.0	61.0	657.0
1885	11.0	16.0	48.0	14.0	51.0	36.0	76.0	65.0	89.0	48.0	55.0	51.0	560.0
1886	35.0	12.0	52.0	59.0	53.0	147.0	93.0	51.0	42.0	42.0	31.0	83.0	700.0
1887	10.0	18.0	56.0	29.0	117.0	39.0	45.0	74.0	34.0	15.0	60.0	44.0	541.0
1888	38.0	47.0	80.0	56.0	28.0	104.0	95.0	123.0	67.0	65.0	32.0	15.0	750.0
1889	20.0	62.0	41.0	59.0	68.0	71.0	103.0	53.0	80.0	82.0	18.0	20.0	677.0
1890	65.0	7.0	23.0	89.0	74.0	105.0	92.0	145.0	111.0	48.0	85.0	6.0	850.0
1891	49.0	12.0	44.0	47.0	50.0	95.0	136.0	72.0	39.0	16.0	41.0	64.0	665.0
1892	52.0	47.0	34.0	48.0	52.0	97.0	71.0	27.0	85.0	62.0	12.0	38.0	625.0
1893	48.0	53.0	39.0	2.0	71.0	47.0	80.0	41.0	52.0	56.0	50.0	18.0	557.0
1894	7.0	47.0	63.0	64.0	99.0	84.0	98.0	82.0	73.0	113.0	15.0	30.0	775.0
1895	58.0	32.0	54.0	50.0	95.0	80.0	84.0	79.0	31.0	51.0	46.0	78.0	738.0
1896	34.0	14.0	56.0	55.0	96.0	103.0	92.0	98.0	75.0	28.0	29.0	24.0	704.0
1897	38.0	48.0	67.0	39.0	125.0	50.0	182.0	101.0	74.0	26.0	26.0	27.0	803.0
1898	42.0	45.0	46.0	73.0	80.0	63.0	61.0	51.0	43.0	61.0	29.0	36.0	630.0
1899	50.0	18.0	15.0	78.0	136.0	62.0	102.0	65.0	127.0	22.0	28.0	55.0	758.0
1900	91.0	81.0	81.0	51.0	52.0	95.0	99.0	40.0	31.0	64.0	55.0	64.0	804.0
1901	34.0	38.0	56.0	67.0	53.0	74.0	105.0	74.0	37.0	67.0	46.0	51.0	702.0
1902	37.0	35.0	49.0	47.0	74.0	82.0	92.0	75.0	64.0	50.0	39.0	44.0	688.0
1903	31.0	34.0	17.0	63.0	49.0	61.0	115.0	93.0	52.0	67.0	89.0	20.0	691.0
1904	21.0	57.0	31.0	68.0	61.0	39.0	23.0	16.0	54.0	66.0	74.0	35.0	545.0
1905	46.0	40.0	49.0	54.0	61.0	50.0	86.0	105.0	53.0	68.0	56.0	32.0	700.0
1906	45.0	29.0	70.0	23.0	85.0	77.0	71.0	61.0	129.0	31.0	33.0	45.0	699.0
1907	59.0	27.0	52.0	59.0	48.0	68.0	137.0	62.0	37.0	31.0	27.0	67.0	674.0
1908	32.0	56.0	28.0	51.0	65.0	66.0	69.0	84.0	49.0	1.0	30.0	12.0	543.0
1909	32.0	76.0	28.0	58.0	50.0	100.0	138.0	45.0	58.0	24.0	52.0	71.0	732.0
1910	34.0	28.0	22.0	44.0	86.0	121.0	93.0	95.0	105.0	27.0	104.0	40.0	799.0
1911	31.0	51.0	35.0	32.0	74.0	32.0	28.0	35.0	58.0	29.0	36.0	64.0	505.0

Examples of Data formats – AnClim, daily data

Data of B1BYSH01_T_07_00_3.txt

Year	Day	1	2	3	4	5	6	7	8	9	10	11	12
1917	11	0.0	-9.8	-4.6	2.0	9.2	16.2	15.0	15.4	11.8	8.4	5.3	-2.5
1917	12	-4.6	-7.6	-4.6	8.4	11.2	17.0	13.8	17.2	18.9	5.2	3.2	0.0
1917	13	-2.0	-6.8	2.4	10.0	11.0	17.8	14.4	19.2	13.0	7.7	1.2	-2.0
1917	14	-6.0	-13.2	0.8	4.0	12.4	17.6	18.0	24.6	9.0	12.3	0.2	-2.0
1917	15	-0.6	-6.8	3.4	4.6	14.2	15.4	18.0	18.7	8.6	8.7	1.0	2.0
1917	16	0.0	-10.4	-6.8	6.2	15.8	18.6	21.4	15.4	7.3	6.0	0.5	-1.2
1917	17	8.4	-11.6	-3.8	3.2	13.8	19.2	19.4	14.0	11.4	4.6	-0.8	-0.5
1917	18	-2.6	-2.6	2.2	3.2	12.2	21.8	16.4	15.2	17.3	12.8	0.2	-0.6
1917	19	-2.6	-1.6	2.2	0.0	21.0	22.4	20.0	15.4	14.6	6.4	4.4	-3.8
1917	20	-9.0	0.0	3.4	0.4	19.0	25.0	21.0	21.4	18.0	4.3	4.6	-9.0
1917	21	-14.6	-1.2	1.0	3.0	12.4	26.0	17.0	17.8	15.0	9.1	5.8	-10.8
1917	22	-13.8	-2.8	-2.8	2.4	6.6	25.0	14.2	15.6	9.3	5.6	1.8	-3.2
1917	23	-11.6	-7.0	-2.8	0.1	11.4	16.2	14.8	14.2	6.6	6.6	1.0	-4.6
1917	24	-10.4	-11.6	-1.8	1.4	15.2	12.6	16.2	23.3	8.4	7.6	6.5	-8.4
1917	25	-10.4	-0.1	-1.6	2.2	17.4	11.2	17.0	17.2	7.4	4.1	7.8	-6.0
1917	26	-11.8	0.4	-1.2	1.6	13.8	20.0	17.8	15.2	7.7	2.8	1.4	-5.0
1917	27	-11.0	0.6	3.0	5.2	11.0	20.0	19.0	18.6	8.8	6.1	-2.4	-7.1
1917	28	-13.0	-1.0	0.0	5.0	18.6	17.2	17.2	13.4	14.8	11.8	5.8	-7.2
1917	29	-11.0	missing	-1.0	4.8	21.0	22.0	23.0	21.6	11.2	14.6	8.4	-2.4
1917	30	-11.2	missing	3.8	11.4	20.0	23.4	20.6	12.4	10.2	4.2	5.6	-2.0
1917	31	-8.6	missing	4.6	missing	23.6	missing	24.0	14.2	missing	7.8	missing	-5.0
1918	1	-5.6	-3.2	4.0	3.6	9.4	12.3	12.2	13.0	13.2	8.3	6.0	-2.8
1918	2	-7.4	-1.0	7.0	12.6	7.6	9.8	11.8	17.0	13.4	7.0	4.4	-3.6
1918	3	-10.8	-1.8	10.0	8.4	9.4	9.8	15.0	16.8	11.8	4.1	4.4	-6.0
1918	4	-13.6	-2.6	6.3	5.1	11.6	7.0	13.4	17.3	10.8	5.4	6.3	0.0

ProcData software, only one Data file, accompanied by Info_file

database processing

Processing window (profile: slovensko)

Menu : Reference

Calculates reference series for each station gi

Item : From Correlations

Selects given Number of stations with average corr

Source files:

right click for context menu

Data file: _e\t_hurv_mes_new_reconstr2

(Data Info file): data\data_info.dbf

ID	EG_EL_ABBR	YEAR	DAY	TIME	N1	N2	N3	N4	N5	N6	N7	N8
B1BYSH01_SCE_07:00	SCE	2006	24	07:00	30.00	10.00	0.00	0.00	0.00	0.00	0.00	-999.00
B1BYSH01_SCE_07:00	SCE	2006	25	07:00	28.00	10.00	0.00	0.00	0.00	0.00	0.00	-999.00
B1BYSH01_SCE_07:00	SCE	2006	26	07:00	28.00	12.00	0.00	0.00	0.00	0.00	0.00	-999.00
B1BYSH01_SCE_07:00	SCE	2006	27	07:00	28.00	9.00	0.00	0.00	0.00	0.00	0.00	-999.00
B1BYSH01_SCE_07:00	SCE	2006	28	07:00	28.00	9.00	0.00	0.00	0.00	0.00	0.00	-999.00
B1BYSH01_SCE_07:00	SCE	2006	29	07:00	28.00	-999.00	0.00	0.00	0.00	0.00	0.00	-999.00
B1BYSH01_SCE_07:00	SCE	2006	30	07:00	28.00	-999.00	0.00	0.00	0.00	0.00	0.00	-999.00
B1BYSH01_SCE_07:00	SCE	2006	31	07:00	27.00	-999.00	0.00	-999.00	0.00	-999.00	0.00	-999.00
B1BYSH01_SNO_07:00	SNO	1961	1	07:00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1BYSH01_SNO_07:00	SNO	1961	2	07:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1BYSH01_SNO_07:00	SNO	1961	3	07:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1BYSH01_SNO_07:00	SNO	1961	4	07:00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
B1BYSH01_SNO_07:00	SNO	1961	5	07:00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
B1BYSH01_SNO_07:00	SNO	1961	6	07:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1BYSH01_SNO_07:00	SNO	1961	7	07:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B1BYSH01_SNO_07:00	SNO	1961	8	07:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00
									0.00	0.00	0.00	0.00

	NAME	ID	B	E	L	IDXXX	III	REGION	LATITUDE	LONGITUDE	ALTITUDE	BEGIN	END	LENGTH	MISS_CN
X	Bystřice pod Hostýnem	B1BYSH01_SCE_07:00				B1BYSH01		SCE	17.67	49.40	315	1.1.1961	31.1.2006	46	
X	Bystřice pod Hostýnem	B1BYSH01_SNO_07:00				B1BYSH01		SNO	17.67	49.40	315	1.1.1961	31.1.2006	46	
	Bystřice pod Hostýnem	B1BYSH01_SRA_07:00				B1BYSH01		SRA	17.67	49.40	315	1.1.1872	31.1.2006	135	
X	Bystřice pod Hostýnem	B1BYSH01_SVH_07:00				B1BYSH01		SVH	17.67	49.40	315	1.1.1961	31.1.2006	46	
X	Holešov	B1HOLE01_SCE_07:00				B1HOLE01		SCE	17.57	49.32	224	1.1.1961	31.1.2006	46	
X	Holešov	B1HOLE01_SNO_07:00				B1HOLE01		SNO	17.57	49.32	224	1.1.1961	31.1.2006	46	
X	Holešov	B1HOLE01_SRA_07:00				B1HOLE01		SRA	17.57	49.32	224	1.1.1953	31.1.2006	54	
X	Holešov	B1HOLE01_SVH_07:00				B1HOLE01		SVH	17.57	49.32	224	1.1.1979	31.1.2006	28	
X	Napajedla	B1NAPA01_SCE_07:00				B1NAPA01		SCE	17.52	49.18	185	1.1.1961	31.1.2006	46	
X	Napajedla	B1NAPA01_SNO_07:00				B1NAPA01		SNO	17.52	49.18	185	1.1.1961	31.1.2006	46	
	Napajedla	B1NAPA01_SRA_07:00				B1NAPA01		SRA	17.52	49.18	185	1.1.1889	31.1.2006	118	
X	Napajedla	B1NAPA01_SVH_07:00				B1NAPA01		SVH	17.52	49.18	185	1.1.1977	31.1.2006	30	
	Brno	B2BKVE01_SCE_07:00				B2BKVE01		SCE	16.57	49.19	223	2.1.1922	31.1.1970	49	
	Brno	B2BKVE01_SNO_07:00				B2BKVE01		SNO	16.57	49.19	223	3.1.1931	31.1.1970	40	
	Brno	B2BKVE01_SRA_07:00				B2BKVE01		SRA	16.57	49.19	223	1.1.1922	31.1.1970	49	
	Brno	B2BPIS01_SCE_07:00				B2BPIS01		SCE	16.57	49.20	203	1.1.1919	31.1.1979	61	
	Brno	B2BPIS01_SNO_07:00				B2BPIS01		SNO	16.57	49.20	203	4.1.1931	31.1.1979	49	
	Brno	B2BPIS01_SRA_07:00				B2BPIS01		SRA	16.57	49.20	203	1.1.1916	31.1.1979	64	
X	Brno	B2BPIS01_SVH_07:00				B2BPIS01		SVH	16.57	49.20	203	1.1.1961	31.1.1979	19	
X	Brno	B2BTUR01_SCE_07:00				B2BTUR01		SCE	16.70	49.16	241	1.1.1961	31.1.2006	46	
X	Brno	B2BTUR01_SNO_07:00				B2BTUR01		SNO	16.70	49.16	241	1.1.1961	31.1.2006	46	
X	Brno	B2BTUR01_SRA_07:00				B2BTUR01		SRA	16.70	49.16	241	1.1.1961	31.1.2006	46	
X	Brno	B2BTUR01_SVH_07:00				B2BTUR01		SVH	16.70	49.16	241	1.1.1969	31.1.2006	38	
X	Jihlava	B2JIHL01_SCE_07:00				B2JIHL01		SCE	15.54	49.39	560	1.1.1961	31.1.1969	9	
X	Jihlava	B2JIHL01_SNO_07:00				B2JIHL01		SNO	15.54	49.39	560	1.1.1961	31.1.1969	9	

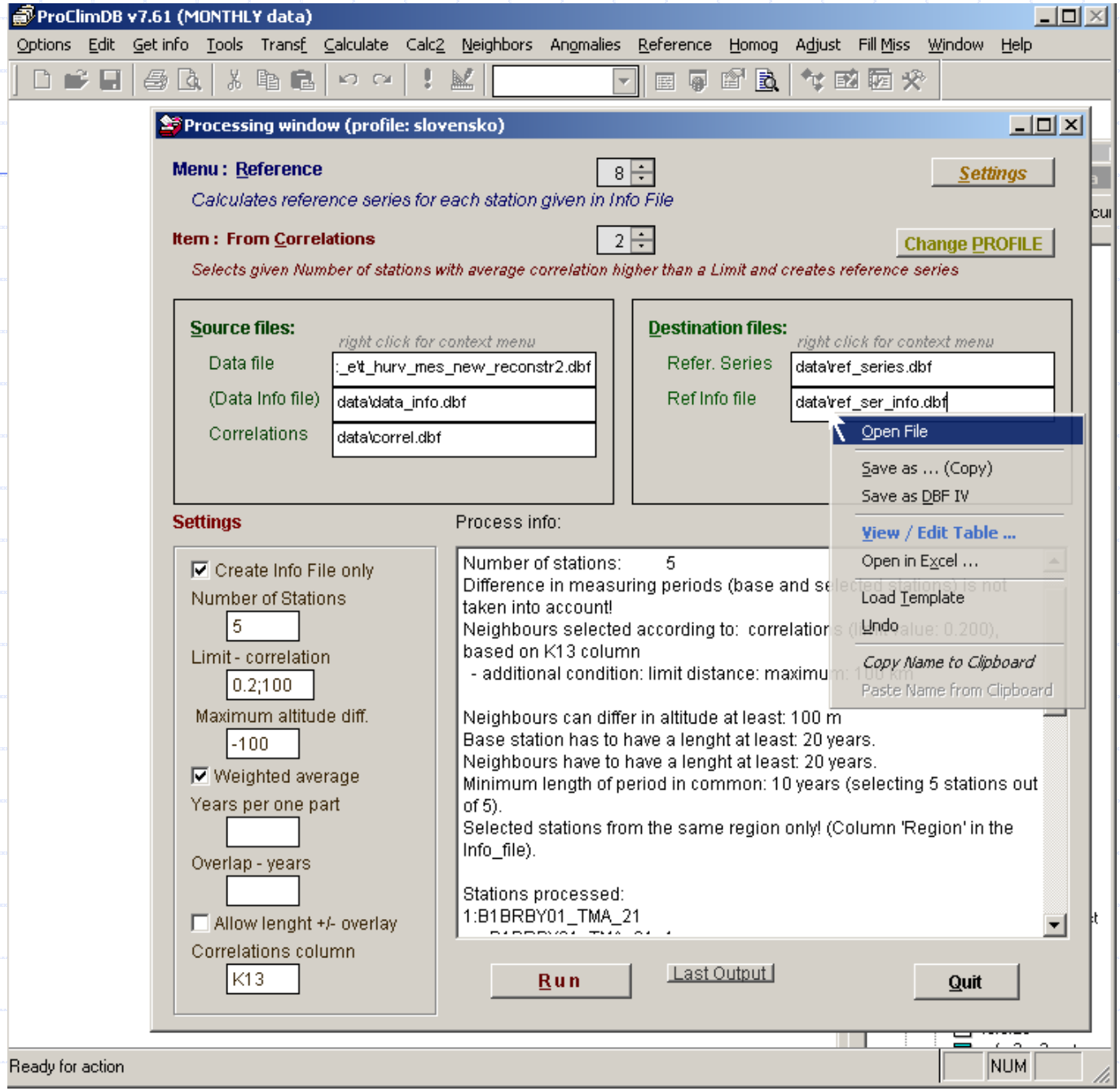
Sett

Allow length +/- overlap

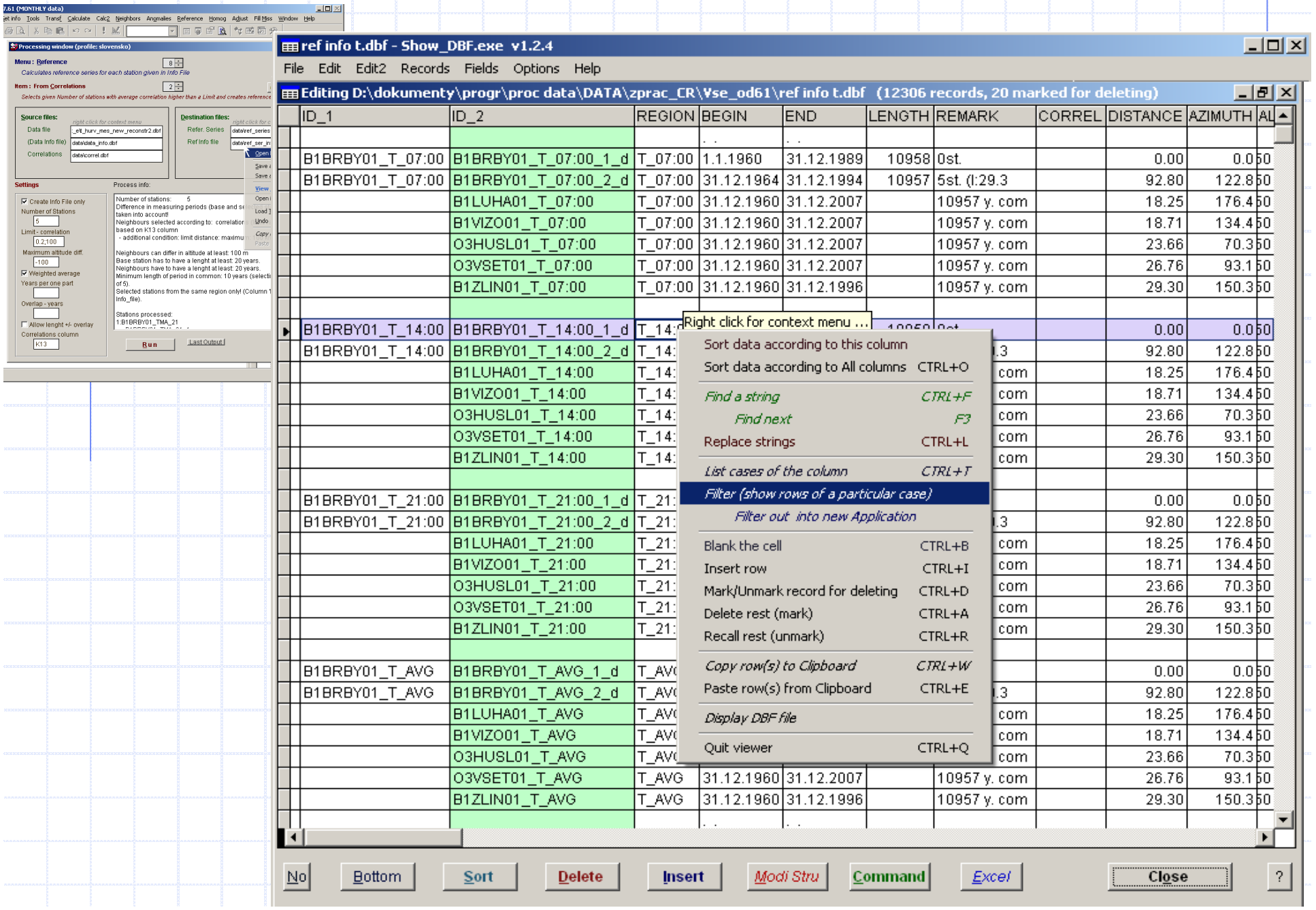
Correlations column: K13

Run | Last Output | **Quit**

ProClimDB software



ProClimDB software



Data formats - ProClimDB

- DBF files (the only DBF file for data + Info file)
- Macro in MS-Excel to load TXT,XLS,... files and to create a DBF data file
- function in ProClimDB to import from TXT,DBF files / export to TXT,... files
- **Monthly** (seasonal, annual), **daily** (even individual time) data processing, or **subdaily** (up to minute records)

Examples of Data formats – ProClimDB, **monthly data**

Id	Year	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	Remark
11801_RV_07:00	1961	88.0	89.0	86.0	74.0	81.0	80.0	75.0	72.0	67.0	67.0	76.0	73.0	
11801_RV_07:00	1962	87.0	81.0	79.0	68.0	75.0	68.0	70.0	78.0	80.0	87.0	89.0	87.0	
11801_RV_07:00	1963	83.0	86.0	84.0	80.0	84.0	79.0	74.0	80.0	84.0	89.0	82.0	87.0	
11801_RV_07:00	1964	85.0	78.0	84.0	75.0	77.0	79.0	80.0	83.0	83.0	87.0	89.0	92.0	
11801_RV_07:00	1965	91.0	88.0	87.0	86.0	81.0	82.0	82.0	83.0	85.0	92.0	86.0	87.0	
11801_RV_07:00	1966	87.0	86.0	88.0	84.0	77.0	80.0	85.0	88.0	90.0	88.0	89.0	88.0	
11801_RV_07:00	1967	86.0	88.0	85.0	83.0	75.0	80.0	78.0	82.0	90.0	88.0	90.0	87.0	
11801_RV_07:00	1968	87.0	91.0	82.0	75.0	74.0	73.0	77.0	87.0	89.0	92.0	90.0	88.0	
11801_RV_07:00	1969	89.0	88.0	89.0	79.0	74.0	86.0	81.0	86.0	88.0	88.0	86.0	93.0	
11801_RV_07:00	1970	90.0	92.0	89.0	84.0	78.0	78.0	84.0	88.0	89.0	93.0	87.0	91.0	
11801_RV_07:00	1971	90.0	92.0	87.0	78.0	80.0	82.0	80.0	80.0	91.0	91.0	90.0	92.0	
11801_RV_07:00	1972	88.0	86.0	75.0	85.0	84.0	78.0	85.0	86.0	88.0	88.0	87.0	87.0	
11801_RV_07:00	1973	85.0	90.0	82.0	79.0	75.0	79.0	82.0	81.0	85.0	85.0	81.0	82.0	

(ID, Year, Months in columns: very useful format > easy processing of individual months)

Id	Year	Pav_4h	Pdsav_4h	Pdssdv_4h	Pf20_4h	Pf40_4h	Pf50_4h	Pf60_4h	Pf80_4h	Pf90_4h
ADAMCLISI	1961	1.221	6.886	6.355	0.957	0.880	0.814	0.756	0.542	0.3
ADAMCLISI	1962	0.966	6.383	6.149	0.944	0.861	0.762	0.729	0.489	0.3
ADAMCLISI	1963	1.079	6.522	6.306	0.950	0.878	0.804	0.737	0.545	0.3
ADAMCLISI	1964	1.051	6.756	5.713	0.936	0.884	0.835	0.772	0.575	0.3
ADAMCLISI	1965	1.055	7.119	7.178	0.925	0.843	0.796	0.721	0.511	0.3
ADAMCLISI	1966	1.723	6.796	7.322	0.959	0.860	0.800	0.710	0.472	0.3
ADAMCLISI	1967	0.976	6.864	5.201	0.949	0.865	0.782	0.709	0.510	0.3
ADAMCLISI	1968	1.117	7.625	9.771	0.955	0.880	0.823	0.749	0.522	0.3
ADAMCLISI	1969	1.493	7.317	10.978	0.963	0.904	0.855	0.799	0.600	0.4
ADAMCLISI	1970	1.633	6.348	5.941	0.966	0.906	0.840	0.782	0.562	0.3
ADAMCLISI	1971	1.670	6.042	5.694	0.964	0.899	0.841	0.789	0.612	0.4
ADAMCLISI	1972	1.533	7.974	7.103	0.967	0.911	0.861	0.803	0.615	0.4

(ID, Year, Annual data (e.g. various indexes) in columns: e.g. individual months, seasons and year can be used > easy processing of individual columns)

Examples of Data formats - ProClimDB, **daily data**

	Id	Year	Day	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12
▶	B1BYSH01_T_07:00	1866	1	-3.7	-0.6	2.8	3.8	11.6	16.0	17.4	9.3	11.3	9.7	4.1	-2.1
	B1BYSH01_T_07:00	1866	2	-3.2	2.7	2.5	4.5	15.0	16.0	15.8	9.7	11.4	12.0	0.5	-3.4
	B1BYSH01_T_07:00	1866	3	-3.0	5.7	0.8	5.8	4.7	15.7	17.0	12.8	12.3	9.1	3.5	1.0
	B1BYSH01_T_07:00	1866	4	-1.3	1.0	-3.2	8.0	4.8	14.5	10.5	13.0	8.8	8.0	5.0	1.5
	B1BYSH01_T_07:00	1866	5	-4.5	1.0	0.5	5.3	10.7	16.4	14.0	11.8	10.5	8.0	4.5	4.0
	B1BYSH01_T_07:00	1866	6	-6.5	1.1	-0.1	5.6	5.0	14.4	14.0	11.5	11.3	7.3	3.8	1.5
	B1BYSH01_T_07:00	1866	7	-3.9	5.0	2.9	8.1	4.1	14.5	11.7	9.0	12.6	1.0	6.8	3.3
	B1BYSH01_T_07:00	1866	8	-4.4	3.9	-1.1	8.7	5.6	14.8	10.6	13.8	14.2	0.8	4.5	2.2
	B1BYSH01_T_07:00	1866	9	-2.0	0.0	0.3	11.6	9.5	14.0	10.7	15.8	14.2	0.7	5.0	-1.5
	B1BYSH01_T_07:00	1866	10	-1.7	1.5	2.7	11.2	11.9	13.5	11.9	11.7	12.4	3.0	0.8	-2.0
	B1BYSH01_T_07:00	1866	11	-1.8	1.4	-0.6	6.8	6.8	14.6	12.3	10.7	12.5	0.5	-4.0	0.0
	B1BYSH01_T_07:00	1866	12	2.3	4.5	0.0	5.8	9.5	16.7	11.8	8.7	12.5	3.2	0.5	-5.5
	B1BYSH01_T_07:00	1866	13	-1.9	2.1	1.6	6.4	6.0	16.4	14.5	8.9	10.5	6.0	4.0	0.6
	B1BYSH01_T_07:00	1866	14	-3.6	-1.7	2.4	5.3	6.2	15.7	15.0	9.5	6.5	8.5	6.1	4.0
	B1BYSH01_T_07:00	1866	15	1.1	-3.0	-3.7	9.4	6.8	13.0	16.2	10.5	11.4	5.0	1.9	-6.2
	B1BYSH01_T_07:00	1866	16	0.0	0.0	-4.3	4.8	5.5	11.4	16.7	11.3	13.5	2.8	-0.3	-6.0
	B1BYSH01_T_07:00	1866	17	1.0	0.5	-1.6	6.9	3.5	15.5	16.2	10.5	7.7	0.0	4.0	-2.2
	B1BYSH01_T_07:00	1866	18	0.0	1.9	4.0	6.7	4.2	8.8	15.7	10.0	10.5	-2.1	-5.0	-1.4
	B1BYSH01_T_07:00	1866	19	3.0	3.3	2.4	6.9	3.0	11.6	13.5	10.5	8.8	-0.1	-1.0	-0.9
	B1BYSH01_T_07:00	1866	20	1.0	-2.0	6.0	1.7	2.1	14.7	12.8	10.5	9.0	-1.5	-6.2	-3.9
	B1BYSH01_T_07:00	1866	21	0.9	-9.3	0.9	7.0	1.8	11.8	10.4	12.5	7.5	-1.1	-6.0	-4.9

(ID, Year, Day, Months in columns: very useful format > easy processing of individual months)

	Year	Month	Day	Id	Value2
	1961	1	1	T1HOLE01	-0.4
	1961	1	1	T1IVAN01	-1.6
	1961	1	1	T1KIOM01	-1.0
	1961	1	1	T1LUHA01	-0.6
	1961	1	1	T1TYSH01	-1.2
	1961	1	2	T1HOLE01	-2.3
	1961	1	2	T1IVAN01	-2.9
	1961	1	2	T1KIOM01	-3.5
	1961	1	2	T1LUHA01	-1.1
	1961	1	2	T1TYSH01	-3.5
	1961	1	3	T1HOLE01	-2.0
	1961	1	3	T1IVAN01	-2.2
	1961	1	3	T1KIOM01	-1.5
	1961	1	3	T1LUHA01	-2.9
	1961	1	3	T1TYSH01	-2.9
	1961	1	4	T1HOLE01	3.5

(ID, Year, Month, Day, Value: very space consuming > long time calculations é)

Examples of Data formats - ProClimDB, **daily data**

ID	YEAR	MONT	VAL01	VAL02	VAL03	VAL04	VAL05	VAL06	VAL07	VAL08	VAL09	VAL10	VAL11	VAL12	VAL13	VAL14	VAL15	VAL16	VAL17	VAL18	VAL19	VAL
B2DVES02	2001	3	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999
B2DVES02	2001	4	4.2	0.0	12.1	13.5	8.8	9.7	11.0	7.7	7.4	7.8	9.5	8.4	3.6	2.6	4.3	7.1	6.3	8.3	6.6	6
B2DVES02	2001	5	18.4	-999.0	21.2	19.5	18.7	-999.0	12.6	15.0	16.5	16.5	15.3	13.2	14.4	15.3	15.5	18.8	20.1	14.2	13.0	14
B2DVES02	2001	6	13.2	14.6	13.0	11.1	13.2	14.8	17.9	18.0	14.7	14.7	12.3	14.9	17.0	17.4	20.0	18.3	16.8	16.6	14.9	17
B2DVES02	2001	7	18.7	18.2	15.9	19.0	20.8	22.3	23.0	20.4	20.9	23.4	19.2	20.3	22.0	24.8	27.2	21.6	15.3	19.6	20.4	17
B2DVES02	2001	8	-999.0	22.5	25.9	22.1	19.3	21.3	22.0	21.6	21.0	17.7	17.0	17.7	19.7	-999.0	23.7	24.5	-999.0	24.4	25.1	21
B2DVES02	2001	9	15.9	16.9	18.5	16.4	13.9	14.8	14.1	15.4	11.9	11.9	12.8	-999.0	13.5	13.3	12.9	11.8	11.3	10.6	12.0	12
B2DVES02	2001	10	17.4	19.8	15.5	14.7	13.6	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	12.9	14.3	11.1	12.0	12.1	12.4	12
B2DVES02	2001	12	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	0.0	0
B2DVES02	2002	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
B2DVES02	2002	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999
B2DVES02	2002	3	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999.0	-999
B2DVES02	2002	4	0.0	0.0	0.0	0.0	2.5	0.8	2.7	6.2	7.0	5.2	7.8	8.3	9.9	9.4	8.5	10.0	11.8	13.1	11.5	11
B2DVES02	2002	5	16.1	19.5	22.6	22.8	13.3	15.2	16.7	18.1	18.5	17.3	18.1	18.9	18.6	17.3	16.4	18.1	21.8	18.5	17.9	16
B2DVES02	2002	6	15.8	13.8	17.4	20.6	19.8	17.3	15.4	15.6	16.5	16.7	16.7	19.8	21.7	21.9	21.4	22.4	22.6	25.4	25.7	26
B2DVES02	2002	7	22.6	21.5	25.3	17.1	19.5	22.4	20.8	22.8	24.6	28.5	21.2	22.3	22.1	22.5	23.9	21.7	21.4	20.4	19.1	21
B2DVES02	2002	8	22.7	10.5	0.0	0.0	17.8	20.9	19.7	20.7	20.5	21.0	19.8	17.0	17.0	17.3	19.5	19.1	21.0	21.7	22.2	21
B2DVES02	2002	9	18.9	16.6	20.1	21.3	20.4	18.6	19.2	20.4	21.2	18.7	17.9	14.0	13.8	15.2	12.9	12.8	13.6	15.5	16.1	15
B2DVES02	2002	10	11.1	11.3	12.0	13.1	10.8	11.7	7.4	7.7	8.1	7.7	5.4	3.8	5.6	6.9	9.8	10.4	11.6	8.5	7.3	6

(ID, Year, Month, Days in columns)

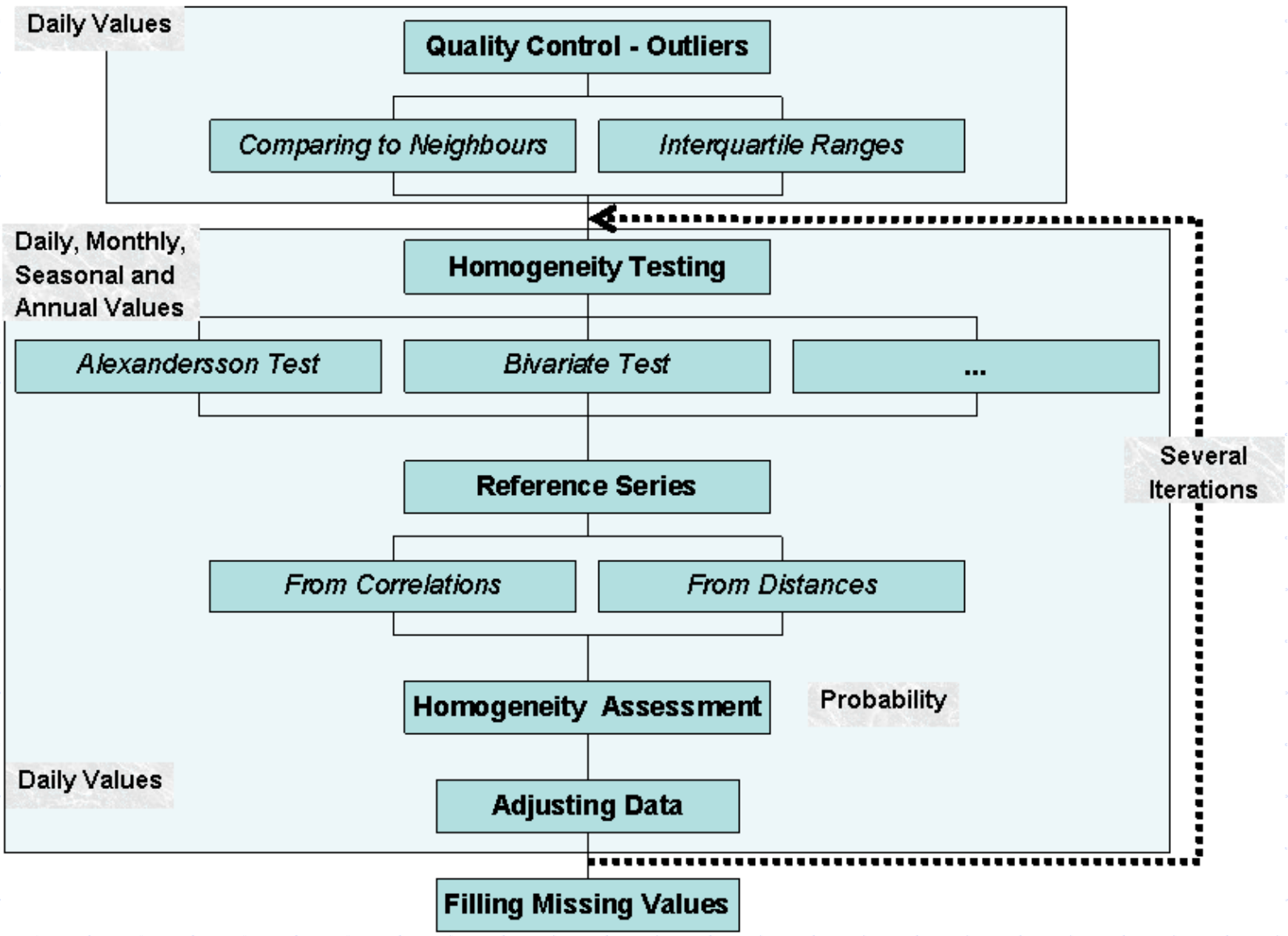
Year	Month	Day	T1hole01	T1ivan01	T1kiom01	T1luha01	T1piot01	T1tity01	T1tysh01
1961	1	1	-0.4	-1.6	-1.0	-0.6	-999	-999	-1.2
1961	1	2	-2.3	-2.9	-3.5	-1.1	-999	-999	-3.5
1961	1	3	-1.1	-1.3	-0.6	-2.0	-999	-999	-2.0
1961	1	4	3.5	0.3	1.0	3.1	-999	-999	2.6
1961	1	5	0.3	-1.4	-1.0	0.4	-999	-999	-0.5
1961	1	6	-3.4	-3.5	-8.0	-3.9	-999	-999	-4.5
1961	1	7	1.4	-1.9	-2.5	1.1	-999	-999	0.5
1961	1	8	-1.6	-2.4	-2.6	-1.4	-999	-999	-2.5
1961	1	9	-0.6	-1.4	-4.0	-0.8	-999	-999	-1.0
1961	1	10	-0.9	-1.1	-1.0	-0.9	-999	-999	-0.5
1961	1	11	0.2	0.1	-0.3	0.1	-999	-999	-2.0
1961	1	12	-0.3	-1.4	-0.3	-0.3	-999	-999	-2.2
1961	1	13	-6.2	-8.5	-7.5	-4.4	-999	-999	-8.5

(Year, Month, Day, IDôs ï stations in individual columns > suitable in case of the same period of measurements)

ProcData software, info_file

	NAME	ID	B	E	L	IDXXX	III	REGION	LATITUDE	LONGITUDE	ALTITUDE	BEGIN	END	LENGTH	MISS_CN
X	Bystřice pod Hostýnem	B1BYSH01_SCE_07:00				B1BYSH01		SCE	17.67	49.40	315	1.1.1961	31.1.2006	46	
X	Bystřice pod Hostýnem	B1BYSH01_SNO_07:00				B1BYSH01		SNO	17.67	49.40	315	1.1.1961	31.1.2006	46	
	Bystřice pod Hostýnem	B1BYSH01_SRA_07:00				B1BYSH01		SRA	17.67	49.40	315	1.1.1872	31.1.2006	135	
X	Bystřice pod Hostýnem	B1BYSH01_SVH_07:00				B1BYSH01		SVH	17.67	49.40	315	1.1.1961	31.1.2006	46	
X	Holešov	B1HOLE01_SCE_07:00				B1HOLE01		SCE	17.57	49.32	224	1.1.1961	31.1.2006	46	
X	Holešov	B1HOLE01_SNO_07:00				B1HOLE01		SNO	17.57	49.32	224	1.1.1961	31.1.2006	46	
X	Holešov	B1HOLE01_SRA_07:00				B1HOLE01		SRA	17.57	49.32	224	1.1.1953	31.1.2006	54	
X	Holešov	B1HOLE01_SVH_07:00				B1HOLE01		SVH	17.57	49.32	224	1.1.1979	31.1.2006	28	
X	Napajedla	B1NAPA01_SCE_07:00				B1NAPA01		SCE	17.52	49.18	185	1.1.1961	31.1.2006	46	
X	Napajedla	B1NAPA01_SNO_07:00				B1NAPA01		SNO	17.52	49.18	185	1.1.1961	31.1.2006	46	
	Napajedla	B1NAPA01_SRA_07:00				B1NAPA01		SRA	17.52	49.18	185	1.1.1889	31.1.2006	118	
X	Napajedla	B1NAPA01_SVH_07:00				B1NAPA01		SVH	17.52	49.18	185	1.1.1977	31.1.2006	30	
	Brno	B2BKVE01_SCE_07:00				B2BKVE01		SCE	16.57	49.19	223	2.1.1922	31.1.1970	49	
	Brno	B2BKVE01_SNO_07:00				B2BKVE01		SNO	16.57	49.19	223	3.1.1931	31.1.1970	40	
	Brno	B2BKVE01_SRA_07:00				B2BKVE01		SRA	16.57	49.19	223	1.1.1922	31.1.1970	49	
	Brno	B2BPIS01_SCE_07:00				B2BPIS01		SCE	16.57	49.20	203	1.1.1919	31.1.1979	61	
	Brno	B2BPIS01_SNO_07:00				B2BPIS01		SNO	16.57	49.20	203	4.1.1931	31.1.1979	49	
	Brno	B2BPIS01_SRA_07:00				B2BPIS01		SRA	16.57	49.20	203	1.1.1916	31.1.1979	64	
X	Brno	B2BPIS01_SVH_07:00				B2BPIS01		SVH	16.57	49.20	203	1.1.1961	31.1.1979	19	
X	Brno	B2BTUR01_SCE_07:00				B2BTUR01		SCE	16.70	49.16	241	1.1.1961	31.1.2006	46	
X	Brno	B2BTUR01_SNO_07:00				B2BTUR01		SNO	16.70	49.16	241	1.1.1961	31.1.2006	46	
X	Brno	B2BTUR01_SRA_07:00				B2BTUR01		SRA	16.70	49.16	241	1.1.1961	31.1.2006	46	
X	Brno	B2BTUR01_SVH_07:00				B2BTUR01		SVH	16.70	49.16	241	1.1.1969	31.1.2006	38	
X	Jihlava	B2JIHL01_SCE_07:00				B2JIHL01		SCE	15.54	49.39	560	1.1.1961	31.1.1969	9	
X	Jihlava	B2JIHL01_SNO_07:00				B2JIHL01		SNO	15.54	49.39	560	1.1.1961	31.1.1969	9	

General scheme of data processing before time series analysis



www.climahom.eu/Download/Budapest_SW.zip