My Latex automated Report

Generated from my notebook.ipynb

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1 Initialisation

1.1 import packages

The required packages for this Notebook are:

Package	Version
ipypublish	0.10.10
prettytable	0.7.2
numpy	1.16.5
pandas	0.25.1
matplotlib	3.1.1
ipython	7.12.0

1.2 definition of functions

1.2.1 function tp display beatiful tables

```
def export_ready_format(df,n=0,wide=False):
    df2=df.round(n).reset_index()
    col=[w.replace("_", " ") for w in list(df2.columns)]
    return pt.PrettyTable(df2.values,col,wide_table=wide)
```

2 import data

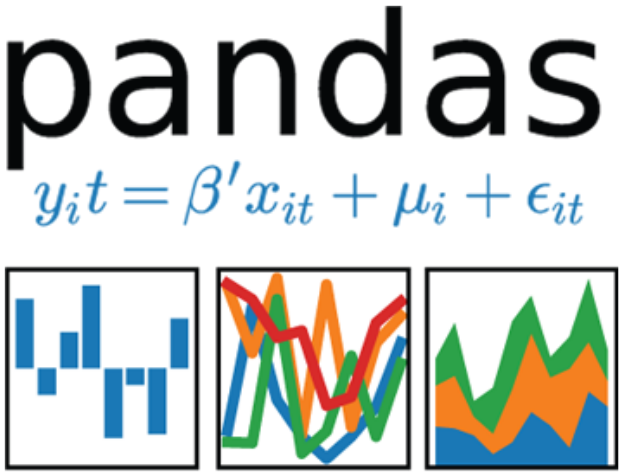
The data for this example are generated with the demo version of meteonorm 7

the data will be dealing with the weather data of the berlin tempelhof weatherstation on monthly basis.

Symbol	Unit	Description
G Gh	kWh/m²	Global solar irradiance monthly averages
G Dh	kWh/m²	Diffuse solar irradiance monthly averages
Ta	°C	Air temperature
Td	°C	Dew point
FF	m/s	wind speed

3 Text and Images

3.1 markdown image and text



here above image is a markdown image and the present text is a markdown text

3.2 Code images and text

```
 The here above images are generated from the concatenation of 2 images using
nb_setup.images_hconcat and this text was written using the print statement
```

4 Example of a table

4.1 table small

`Monthly weather data from Berlin`

`units`

index	month	G Gh	G Dh	Ta	Td	FF
0	nan	kWh/m²	kWh/m²	°C	°C	m/s

`data`

index	G Gh	G Dh	Ta	Td	FF
1.0	20.0	12.0	1.0	-2.0	4.0
2.0	36.0	20.0	2.0	-1.0	4.0
3.0	76.0	43.0	4.0	0.0	5.0
4.0	124.0	67.0	10.0	3.0	3.0
5.0	154.0	78.0	15.0	8.0	5.0
6.0	164.0	85.0	17.0	11.0	4.0
7.0	160.0	81.0	19.0	13.0	4.0
8.0	136.0	68.0	19.0	13.0	4.0
9.0	94.0	47.0	14.0	10.0	4.0
10.0	55.0	32.0	10.0	7.0	4.0
11.0	24.0	16.0	5.0	3.0	4.0
12.0	15.0	10.0	1.0	-1.0	6.0

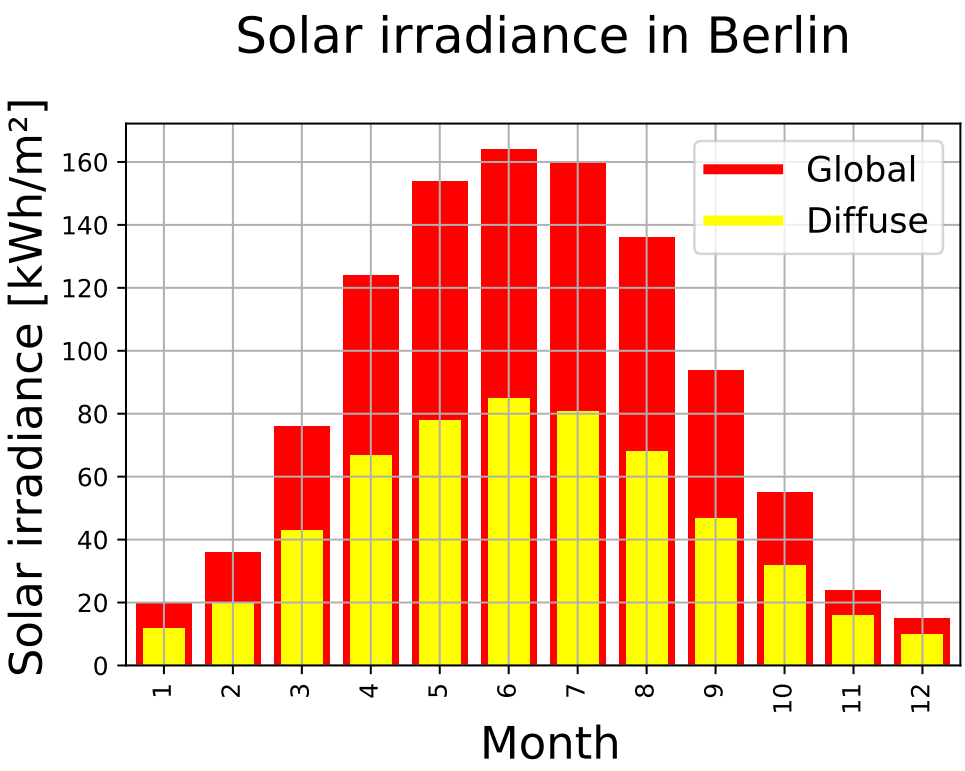
4.2 Table wide

This is an example of wide table with random float rounded to 3 position after comma

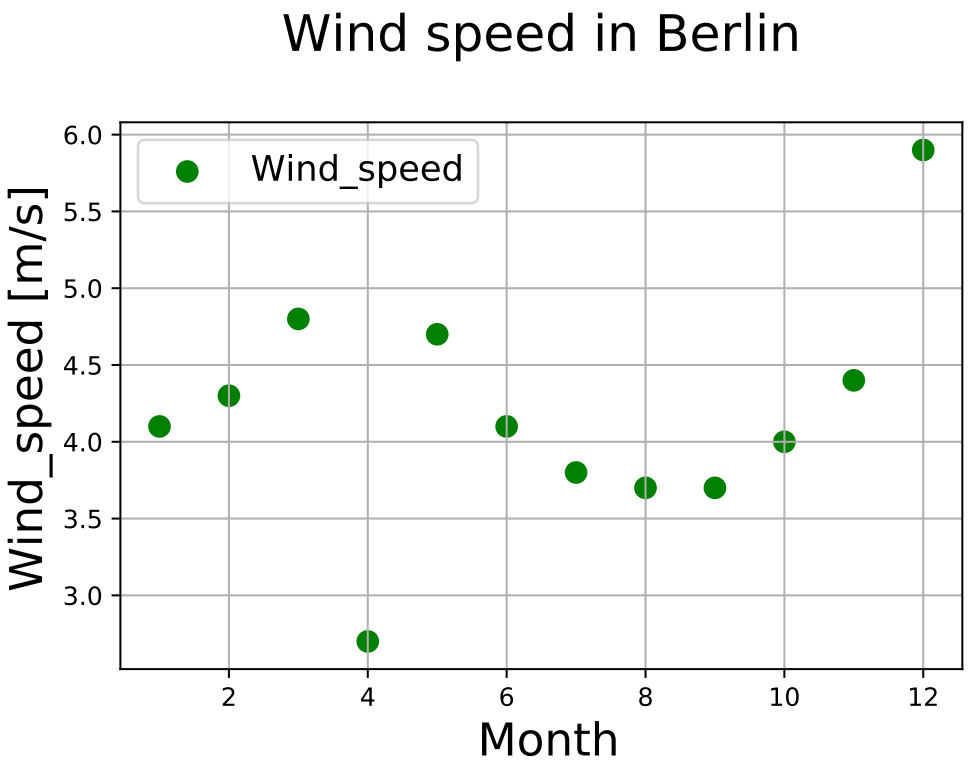
index	col 1	col 2	col 3	col 4	col 5	col 6	col 7	col 8	col 9	col 10	col 11	col 12	col 13	col 14	col 15
0.0	141.587	147.807	18.634	140.561	139.669	188.75	136.362	222.179	216.358	193.761	73.195	154.315	188.166	221.508	100.682
1.0	237.598	94.612	197.325	250.313	110.662	127.267	115.431	204.143	110.629	12.782	73.888	241.525	43.99	249.438	209.184
2.0	19.48	31.134	192.194	32.261	49.988	142.631	167.684	88.867	184.068	103.502	135.944	12.515	174.025	46.818	149.154
3.0	4.917	192.06	86.59	245.928	70.908	247.434	49.163	200.105	224.294	42.617	83.086	251.94	96.094	108.293	116.583
4.0	109.234	48.983	216.928	228.443	2.22	114.391	146.433	101.617	211.012	106.881	136.375	40.507	220.868	32.054	133.658
5.0	168.597	223.705	211.099	8.819	16.635	251.751	22.539	110.044	155.799	92.625	128.944	91.167	136.526	103.162	230.872
6.0	86.02	128.109	74.832	98.393	5.268	234.295	225.926	22.687	179.032	126.705	209.122	162.626	3.918	140.754	96.551
7.0	76.875	10.567	242.428	6.312	211.138	129.815	246.136	118.315	240.23	24.465	219.083	243.874	106.071	209.646	44.233
8.0	6.399	187.04	238.39	140.404	246.932	112.356	11.3	97.853	97.683	164.443	62.669	205.508	199.404	137.437	187.287
9.0	226.41	240.212	181.827	37.954	0.028	177.432	70.542	103.877	87.566	199.135	8.733	2.999	231.368	153.88	190.268
10.0	178.416	10.163	7.46	180.122	107.695	241.944	172.694	64.278	207.84	207.04	79.606	154.793	171.771	16.747	8.08
11.0	218.742	215.11	178.857	44.683	106.971	104.854	47.587	158.285	108.266	163.067	73.665	54.143	103.85	124.692	64.509
12.0	131.838	28.858	207.593	139.734	68.551	248.96	164.704	213.185	182.984	52.834	5.384	47.009	115.225	241.151	119.737
13.0	61.701	137.105	16.302	101.25	194.126	44.415	141.786	20.18	223.788	104.582	178.426	76.085	71.385	107.472	179.249
14.0	131.27	128.797	84.994	205.675	88.935	28.93	71.572	141.599	237.876	123.67	30.565	33.584	10.798	204.964	220.463
15.0	194.598	85.244	230.848	195.42	213.764	69.009	161.704	199.713	239.808	253.277	110.25	251.625	198.215	125.291	72.588
16.0	73.352	194.397	193.063	199.441	218.117	44.826	105.339	162.596	57.457	121.101	227.093	210.739	84.817	1.894	82.938
17.0	65.462	81.576	191.245	71.347	56.088	226.868	101.614	73.157	213.851	116.955	39.634	164.889	76.568	36.163	103.585
18.0	108.193	192.956	103.207	64.606	217.151	167.874	163.562	1.94	13.971	38.944	226.644	89.909	13.991	95.732	101.605
19.0	79.883	250.384	227.905	183.548	87.725	239.59	93.472	232.966	253.973	148.126	64.793	246.475	36.213	83.827	185.482

5 Example of chart

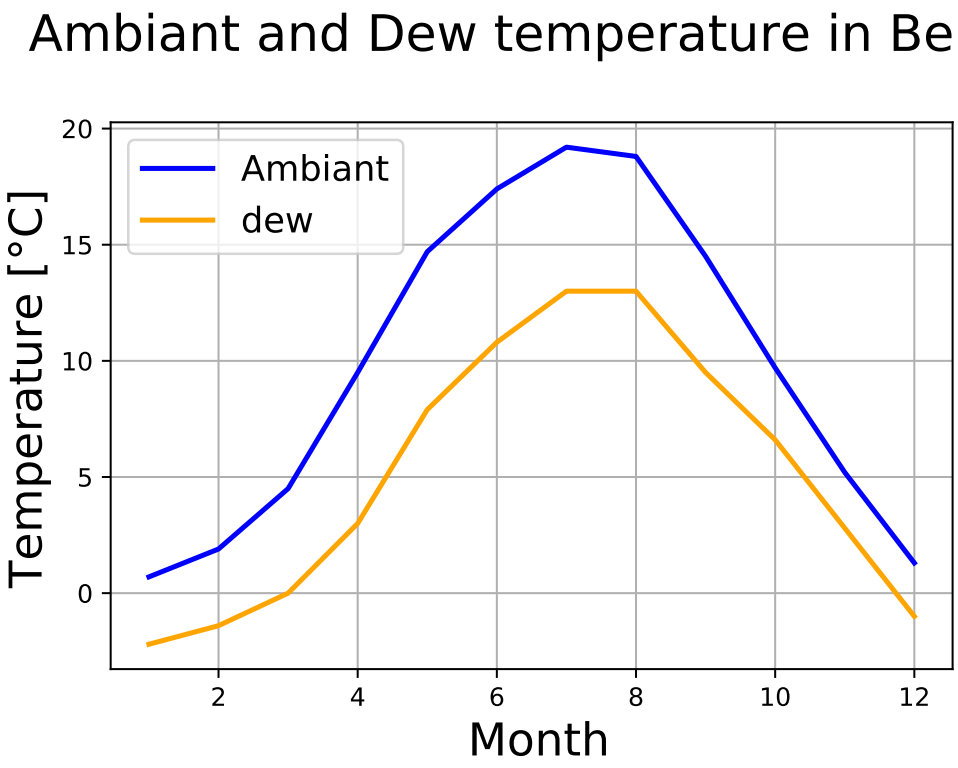
5.1 chart bar



5.2 chart scatter



5.3 chart line



6 Example of matematic formulas

example 1:

$$y = ax + b$$

with:

- y : Ordonate
- x : Abscissa
- a : Slope
- b : Initial value

example 2:

$$\sum_{i=1}^{\infty} i = \frac{n(n+1)}{2}$$

example 3:

$$\int_{0}^{\infty} \sqrt{x} e^{-x} dx = \frac{1}{2}\sqrt{\pi}$$

7 Generation of the template

```
Overwriting my_template.tplx
```