Datasets y visualización

Importar con readtable y readmatrix

```
% readmatrix
area_mm=readmatrix("../../Digitalizacion de señales/S3/Utils4SP/Datasets/areaMM.txt",'D

% readtable
PSD_bands=readtable("../../Digitalizacion de señales/S3/Utils4SP/Datasets/2021.10.04_In
```

Función custom de Import File

```
%Pasa sonda Cassini
Cassini=importfile_cassini("../../Digitalizacion de señales/S3/Utils4SP/Datasets/05358_
```

Cassini = 86136×8 table

	FechaHora	Bx_nT	By_nt	Bz_nt	Bmag_nt	X_km	Y_km	Z_km
1	2005 000 24...	-2.7452	5.0172	1.3641	5.8797	-464080	-584230	-5.0574e+03
2	2005 000 24...	-2.7440	5.0013	1.3821	5.8698	-464160	-584160	-5.0574e+03
3	2005 000 24...	-2.7611	4.9922	1.3620	5.8654	-464240	-584080	-5.0574e+03
4	2005 000 24...	-2.7872	4.9906	1.3063	5.8637	-464330	-584000	-5.0573e+03
5	2005 000 24...	-2.8236	4.9870	1.2626	5.8684	-464420	-583920	-5.0573e+03
6	2005 000 24...	-2.8287	4.9841	1.2417	5.8640	-464510	-583850	-5.0572e+03
7	2005 000 24...	-2.8538	4.9836	1.2323	5.8736	-464590	-583770	-5.0572e+03
8	2005 000 24...	-2.8580	4.9615	1.2184	5.8541	-464680	-583690	-5.0571e+03
9	2005 000 24...	-2.8415	4.9557	1.1967	5.8366	-464770	-583610	-5.0571e+03
10	2005 000 24...	-2.7741	4.9748	1.1646	5.8140	-464850	-583540	-5057
11	2005 000 24...	-2.8048	4.9845	1.1225	5.8288	-464940	-583460	-5057
12	2005 000 24...	-2.8923	4.9205	1.1999	5.8326	-465030	-583380	-5.0569e+03
13	2005 000 24...	-2.9075	4.8933	1.2754	5.8332	-465110	-583300	-5.0569e+03
14	2005 000 24...	-2.9303	4.8529	1.3249	5.8219	-465200	-583220	-5.0568e+03
15	2005 000 24...	-2.9347	4.8460	1.3296	5.8194	-465290	-583150	-5.0568e+03
16	2005 000 24...	-2.9579	4.8148	1.3541	5.8109	-465370	-583070	-5.0567e+03
17	2005 000 24...	-2.9816	4.7599	1.3418	5.7748	-465460	-582990	-5.0567e+03
18	2005 000 24...	-2.9126	4.7513	1.3469	5.7337	-465550	-582910	-5.0567e+03
19	2005 000 24...	-2.8409	4.8043	1.3264	5.7370	-465630	-582840	-5.0566e+03
20	2005 000 24...	-2.8691	4.8267	1.3019	5.7642	-465720	-582760	-5.0566e+03
21	2005 000 24...	-2.9297	4.7841	1.3030	5.7594	-465810	-582680	-5.0565e+03
22	2005 000 24...	-2.9946	4.7423	1.3109	5.7600	-465890	-582600	-5.0565e+03

	FechaHora	Bx_nT	By_nt	Bz_nt	Bmag_nt	X_km	Y_km	Z_km
23	2005 000 24...	-2.9878	4.7390	1.3237	5.7566	-465980	-582520	-5.0564e+03
24	2005 000 24...	-2.9775	4.7496	1.3253	5.7604	-466070	-582450	-5.0564e+03
25	2005 000 24...	-2.9716	4.7970	1.2988	5.7905	-466150	-582370	-5.0563e+03
26	2005 000 24...	-2.9384	4.8151	1.3138	5.7920	-466240	-582290	-5.0563e+03
27	2005 000 24...	-2.8968	4.8244	1.3222	5.7808	-466330	-582210	-5.0562e+03
28	2005 000 24...	-2.8433	4.8753	1.2954	5.7908	-466410	-582140	-5.0562e+03
29	2005 000 24...	-2.9122	4.8649	1.3238	5.8226	-466500	-582060	-5.0561e+03
30	2005 000 24...	-2.9448	4.8771	1.3651	5.8587	-466580	-581980	-5.0561e+03
31	2005 000 24...	-3.0486	4.8369	1.3735	5.8804	-466670	-581900	-5056
32	2005 000 24...	-3.0631	4.8625	1.3254	5.8982	-466760	-581820	-5056
33	2005 000 24...	-3.0008	4.8654	1.2729	5.8565	-466840	-581750	-5.0559e+03
34	2005 000 24...	-2.9791	4.8810	1.2320	5.8497	-466930	-581670	-5.0559e+03
35	2005 000 24...	-3.0248	4.8975	1.2472	5.8901	-467020	-581590	-5.0559e+03
36	2005 000 24...	-3.0354	4.9115	1.2692	5.9119	-467100	-581510	-5.0558e+03
37	2005 000 24...	-3.0336	4.9295	1.2456	5.9210	-467190	-581430	-5.0558e+03
38	2005 000 24...	-2.9487	5.0208	1.2831	5.9626	-467280	-581360	-5.0557e+03
39	2005 000 24...	-2.9833	5.1079	1.2657	6.0494	-467360	-581280	-5.0557e+03
40	2005 000 24...	-3.1305	5.0810	1.2299	6.0939	-467450	-581200	-5.0556e+03
41	2005 000 24...	-3.2171	5.0642	1.2027	6.1191	-467540	-581120	-5.0556e+03
42	2005 000 24...	-3.1869	5.1366	1.1921	6.1615	-467620	-581040	-5.0555e+03
43	2005 000 24...	-3.1529	5.2051	1.1585	6.1949	-467710	-580960	-5.0555e+03
44	2005 000 24...	-3.1157	5.2555	1.1823	6.2231	-467790	-580890	-5.0554e+03
45	2005 000 24...	-3.1088	5.2468	1.2264	6.2208	-467880	-580810	-5.0554e+03
46	2005 000 24...	-3.0881	5.2290	1.2692	6.2042	-467970	-580730	-5.0553e+03
47	2005 000 24...	-3.0929	5.2107	1.3454	6.2072	-468050	-580650	-5.0553e+03
48	2005 000 24...	-3.0682	5.1899	1.4009	6.1898	-468140	-580570	-5.0552e+03
49	2005 000 24...	-2.9944	5.1812	1.4599	6.1599	-468230	-580500	-5.0552e+03
50	2005 000 24...	-2.9423	5.1864	1.4653	6.1403	-468310	-580420	-5.0552e+03
51	2005 000 24...	-2.8783	5.1954	1.4232	6.1077	-468400	-580340	-5.0551e+03
52	2005 000 24...	-2.8518	5.2087	1.3559	6.0913	-468480	-580260	-5.0551e+03
53	2005 000 24...	-2.8743	5.2247	1.2694	6.0969	-468570	-580180	-5055
54	2005 000 24...	-2.8789	5.2399	1.2303	6.1041	-468660	-580100	-5055
55	2005 000 24...	-2.8179	5.2423	1.1945	6.0704	-468740	-580030	-5.0549e+03

	FechaHora	Bx_nT	By_nt	Bz_nt	Bmag_nt	X_km	Y_km	Z_km
56	2005 000 24...	-2.7992	5.2566	1.1308	6.0620	-468830	-579950	-5.0549e+03
57	2005 000 24...	-2.7462	5.2590	1.0423	6.0239	-468920	-579870	-5.0548e+03
58	2005 000 24...	-2.8060	5.2291	1.0344	6.0241	-469000	-579790	-5.0548e+03
59	2005 000 24...	-2.8285	5.2342	0.9778	6.0298	-469090	-579710	-5.0547e+03
60	2005 001 24...	-2.7358	5.2443	0.8649	5.9781	-469170	-579630	-5.0547e+03
61	2005 001 24...	-2.8257	5.1677	0.9094	5.9601	-469260	-579560	-5.0546e+03
62	2005 001 24...	-2.9202	5.1316	0.9559	5.9814	-469350	-579480	-5.0546e+03
63	2005 001 24...	-2.8955	5.1758	0.8217	5.9878	-469430	-579400	-5.0545e+03
64	2005 001 24...	-2.8439	5.1952	0.6808	5.9619	-469520	-579320	-5.0545e+03
65	2005 001 24...	-2.8271	5.2301	0.5547	5.9712	-469600	-579240	-5.0544e+03
66	2005 001 24...	-2.8648	5.2181	0.5894	5.9821	-469690	-579160	-5.0544e+03
67	2005 001 24...	-2.9792	5.1543	0.5860	5.9825	-469780	-579090	-5.0544e+03
68	2005 001 24...	-3.1606	5.0790	0.5809	6.0107	-469860	-579010	-5.0543e+03
69	2005 001 24...	-3.1631	5.0743	0.5619	6.0059	-469950	-578930	-5.0543e+03
70	2005 001 24...	-3.1335	5.0907	0.5843	6.0064	-470030	-578850	-5.0542e+03
71	2005 001 24...	-3.1010	5.0800	0.5804	5.9801	-470120	-578770	-5.0542e+03
72	2005 001 24...	-3.0324	5.1168	0.6123	5.9794	-470210	-578690	-5.0541e+03
73	2005 001 24...	-3.0399	5.1338	0.5743	5.9940	-470290	-578620	-5.0541e+03
74	2005 001 24...	-3.1055	5.1105	0.5137	6.0023	-470380	-578540	-5054
75	2005 001 24...	-3.1384	5.0656	0.4825	5.9786	-470460	-578460	-5054
76	2005 001 24...	-3.1519	5.0034	0.4394	5.9299	-470550	-578380	-5.0539e+03
77	2005 001 24...	-3.1807	4.9360	0.4094	5.8866	-470630	-578300	-5.0539e+03
78	2005 001 24...	-3.2827	4.8782	0.3735	5.8920	-470720	-578220	-5.0538e+03
79	2005 001 24...	-3.3598	4.8462	0.3376	5.9069	-470810	-578140	-5.0538e+03
80	2005 001 24...	-3.4188	4.7852	0.3368	5.8908	-470890	-578060	-5.0537e+03
81	2005 001 24...	-3.4363	4.7716	0.3279	5.8895	-470980	-577990	-5.0537e+03
82	2005 001 24...	-3.5468	4.7228	0.3931	5.9196	-471060	-577910	-5.0537e+03
83	2005 001 24...	-3.5558	4.7192	0.4095	5.9233	-471150	-577830	-5.0536e+03
84	2005 001 24...	-3.5397	4.7730	0.4180	5.9572	-471240	-577750	-5.0536e+03
85	2005 001 24...	-3.5655	4.8207	0.4169	6.0108	-471320	-577670	-5.0535e+03
86	2005 001 24...	-3.5571	4.8737	0.4512	6.0508	-471410	-577590	-5.0535e+03
87	2005 001 24...	-3.6784	4.8493	0.4834	6.1059	-471490	-577510	-5.0534e+03
88	2005 001 24...	-3.7312	4.8767	0.4899	6.1601	-471580	-577440	-5.0534e+03

	FechaHora	Bx_nT	By_nt	Bz_nt	Bmag_nt	X_km	Y_km	Z_km
89	2005 001 24...	-3.7673	4.9058	0.5065	6.2062	-471660	-577360	-5.0533e+03
90	2005 001 24...	-3.7945	4.9502	0.5046	6.2577	-471750	-577280	-5.0533e+03
91	2005 001 24...	-3.7556	5.0164	0.4914	6.2858	-471840	-577200	-5.0532e+03
92	2005 001 24...	-3.7531	4.9587	0.4755	6.2372	-471920	-577120	-5.0532e+03
93	2005 001 24...	-3.7456	4.9857	0.4804	6.2546	-472010	-577040	-5.0531e+03
94	2005 001 24...	-3.7070	5.0934	0.4551	6.3165	-472100	-576960	-5.0531e+03
95	2005 001 24...	-3.5846	5.2323	0.4404	6.3578	-472180	-576880	-5053
96	2005 001 24...	-3.5387	5.2648	0.4785	6.3616	-472270	-576800	-5053
97	2005 001 24...	-3.5689	5.2588	0.4976	6.3750	-472350	-576720	-5.0529e+03
98	2005 001 24...	-3.5481	5.2905	0.5089	6.3906	-472440	-576650	-5.0529e+03
99	2005 001 24...	-3.3928	5.4474	0.5260	6.4395	-472520	-576570	-5.0529e+03
100	2005 001 24...	-3.3156	5.5496	0.5386	6.4871	-472610	-576490	-5.0528e+03

⋮

Importar audio

```
[buho,fs_buho]=audioread("../../Digitalizacion de señales/S3/Utils4SP/Datasets/Owl.wav"
% Escuchar
sound(buho,fs_buho)
```

Datastore

```
% % Le indicamos que una carpeta es un datastore
% ds=datastore("../../Digitalizacion de señales/S3/Utils4SP/Datasets/atmosfera_partLogg
% ds.VariableNames=["Fecha" "Hora" "Pres_kpa" "Temp_C" "Hum_perc" "Bat_V"]
% ds.TextscanFormats=["%s" "%s" "%f" "%f" "%f" "%f"];
% %leer todas las entradas
% atmosfera=readall(ds);
%
% %Parche por si la tabla ya se importo
% %atmosfera.Properties.VariableNames=["Fecha" "Hora" "Pres_kpa" "Temp_C" "Hum_perc" "E
```

Primeras lecturas atmosféricas

```
ds=datastore("../../Digitalizacion de señales/S3/Utils4SP/Datasets/AtmosferaLogger/");
ds.VariableNames=["Fecha" "Hora" "Pres_kpa" "Temp_C" "Hum_perc"]
```

```
ds =
  TabularTextDatastore with properties:
```

```
                    Files: {
                           ' .../S3/Utils4SP/Datasets/AtmosferaLogger/210425.txt';
                           ' .../S3/Utils4SP/Datasets/AtmosferaLogger/210426.TXT';
                           ' .../S3/Utils4SP/Datasets/AtmosferaLogger/210427.TXT'
                            ... and 35 more
                           }
                  Folders: {
                           ' .../paush/Digitalizacion de señales/S3/Utils4SP/Datasets/AtmosferaLogger'
                           }
              FileEncoding: 'UTF-8'
   AlternateFileSystemRoots: {}
         VariableNamingRule: 'modify'
          ReadVariableNames: false
              VariableNames: {'Fecha', 'Hora', 'Pres_kpa' ... and 2 more}
             DatetimeLocale: en_US

  Text Format Properties:
             NumHeaderLines: 0
                  Delimiter: {' ', '\t'}
               RowDelimiter: '\r\n'
             TreatAsMissing: ''
               MissingValue: NaN

  Advanced Text Format Properties:
            TextscanFormats: {'%f', '%T', '%f' ... and 2 more}
                   TextType: 'char'
         ExponentCharacters: 'eEdD'
                CommentStyle: ''
                  Whitespace: '\b'
    MultipleDelimitersAsOne: true

  Properties that control the table returned by preview, read, readall:
      SelectedVariableNames: {'Fecha', 'Hora', 'Pres_kpa' ... and 2 more}
            SelectedFormats: {'%f', '%T', '%f' ... and 2 more}
                   ReadSize: 20000 rows
                 OutputType: 'table'
                   RowTimes: []

  Write-specific Properties:
     SupportedOutputFormats: ["txt"    "csv"    "xlsx"    "xls"    "parquet"    "parq"]
        DefaultOutputFormat: "txt"
```

```
ds.TextscanFormats=["%s" "%s" "%f" "%f" "%f"]
```

```
ds =
  TabularTextDatastore with properties:

                    Files: {
                           ' .../S3/Utils4SP/Datasets/AtmosferaLogger/210425.txt';
                           ' .../S3/Utils4SP/Datasets/AtmosferaLogger/210426.TXT';
                           ' .../S3/Utils4SP/Datasets/AtmosferaLogger/210427.TXT'
                            ... and 35 more
                           }
                  Folders: {
                           ' .../paush/Digitalizacion de señales/S3/Utils4SP/Datasets/AtmosferaLogger'
                           }
              FileEncoding: 'UTF-8'
   AlternateFileSystemRoots: {}
         VariableNamingRule: 'modify'
          ReadVariableNames: false
              VariableNames: {'Fecha', 'Hora', 'Pres_kpa' ... and 2 more}
             DatetimeLocale: en_US

  Text Format Properties:
```

```
            NumHeaderLines: 0
                 Delimiter: {' ', '\t'}
              RowDelimiter: '\r\n'
            TreatAsMissing: ''
              MissingValue: NaN

  Advanced Text Format Properties:
            TextscanFormats: {'%s', '%s', '%f' ... and 2 more}
                   TextType: 'char'
          ExponentCharacters: 'eEdD'
                CommentStyle: ''
                  Whitespace: '\b'
    MultipleDelimitersAsOne: true

  Properties that control the table returned by preview, read, readall:
      SelectedVariableNames: {'Fecha', 'Hora', 'Pres_kpa' ... and 2 more}
            SelectedFormats: {'%s', '%s', '%f' ... and 2 more}
                   ReadSize: 20000 rows
                 OutputType: 'table'
                   RowTimes: []

  Write-specific Properties:
     SupportedOutputFormats: ["txt"    "csv"    "xlsx"    "xls"    "parquet"    "parq"]
        DefaultOutputFormat: "txt"
```

```
atmosfera=readall(ds)
```

atmosfera = 546110×5 table

	Fecha	Hora	Pres_kpa	Temp_C	Hum_perc
1	'210425'	'21:03:51'	78.0500	28.7900	33.5200
2	'210425'	'21:03:56'	78.0500	29.1200	33.1200
3	'210425'	'21:04:01'	78.0500	29.1600	33.0900
4	'210425'	'21:04:06'	78.0500	29.2000	36.5800
5	'210425'	'21:04:11'	78.0500	29.3000	35.6800
6	'210425'	'21:04:16'	78.0500	29.3700	34.4800
7	'210425'	'21:04:22'	78.0500	29.4300	33.9900
8	'210425'	'21:04:27'	78.0500	29.5000	34
9	'210425'	'21:04:32'	78.0500	29.5700	34.2100
10	'210425'	'21:04:37'	78.0500	29.6300	33.8100
11	'210425'	'21:04:42'	78.0500	29.6900	34.0100
12	'210425'	'21:04:47'	78.0500	29.7600	33.6200
13	'210425'	'21:04:52'	78.0500	29.8200	33.8200
14	'210425'	'21:04:57'	78.0500	29.8700	33.4100
15	'210425'	'21:05:02'	78.0500	29.9100	33.8300
16	'210425'	'21:05:07'	78.0500	29.9500	33.1400
17	'210425'	'21:05:12'	78.0500	29.9900	33.2600
18	'210425'	'21:05:17'	78.0500	30.0200	33.2300

	Fecha	Hora	Pres_kpa	Temp_C	Hum_perc
19	'210425'	'21:05:22'	78.0500	30.0700	33.3800
20	'210425'	'21:05:27'	78.0500	30.1000	33.1900
21	'210425'	'21:05:32'	78.0500	30.1300	33.1500
22	'210425'	'21:05:37'	78.0500	30.1500	32.2900
23	'210425'	'21:05:42'	78.0500	30.1700	32.5300
24	'210425'	'21:05:47'	78.0500	30.2000	32.7900
25	'210425'	'21:05:52'	78.0500	30.2300	32.6800
26	'210425'	'21:05:57'	78.0500	30.2600	32.4600
27	'210425'	'21:06:02'	78.0500	30.3000	32.8600
28	'210425'	'21:06:07'	78.0500	30.3300	32.7600
29	'210425'	'21:06:12'	78.0500	30.3400	32.1100
30	'210425'	'21:06:17'	78.0500	30.3700	32.0100
31	'210425'	'21:06:22'	78.0500	30.3900	32.2800
32	'210425'	'21:06:27'	78.0500	30.4200	32.1800
33	'210425'	'21:06:32'	78.0500	30.4500	31.9800
34	'210425'	'21:06:37'	78.0500	30.4600	32.1600
35	'210425'	'21:06:42'	78.0500	30.4600	31.9100
36	'210425'	'21:06:47'	78.0500	30.4800	32
37	'210425'	'21:06:52'	78.0500	30.5100	32.1000
38	'210425'	'21:06:57'	78.0500	30.5400	32.6400
39	'210425'	'21:07:02'	78.0500	30.5500	32.1200
40	'210425'	'21:07:07'	78.0500	30.5900	32.8300
41	'210425'	'21:07:12'	78.0500	30.5400	31.6400
42	'210425'	'21:07:17'	78.0500	30.4700	31.0500
43	'210425'	'21:07:22'	78.0500	30.3800	30.8800
44	'210425'	'21:07:27'	78.0500	30.3200	30.9800
45	'210425'	'21:07:32'	78.0500	30.2700	31.0300
46	'210425'	'21:07:38'	78.0500	30.2300	31.0900
47	'210425'	'21:07:43'	78.0500	30.1800	31.1300
48	'210425'	'21:07:48'	78.0500	30.1300	31.1500
49	'210425'	'21:07:53'	78.0500	30.0800	31.2000
50	'210425'	'21:08:00'	78.0500	29.9800	31.3200
51	'210425'	'21:08:05'	78.0500	29.9700	31.3700

	Fecha	Hora	Pres_kpa	Temp_C	Hum_perc
52	'210425'	'21:08:10'	78.0500	29.8700	31.5000
53	'210425'	'21:08:15'	78.0500	29.8000	31.7900
54	'210425'	'21:08:20'	78.0500	29.7400	31.8200
55	'210425'	'21:08:25'	78.0500	29.7200	31.8200
56	'210425'	'21:08:30'	78.0500	29.7000	31.8700
57	'210425'	'21:08:35'	78.0500	29.6800	31.8900
58	'210425'	'21:08:40'	78.0500	29.6700	31.9100
59	'210425'	'21:08:45'	78.0500	29.6500	31.9600
60	'210425'	'21:08:50'	78.0500	29.6300	31.9700
61	'210425'	'21:08:55'	78.0500	29.6200	31.9600
62	'210425'	'21:09:00'	78.0500	29.6000	31.9900
63	'210425'	'21:09:05'	78.0500	29.6000	32.0100
64	'210425'	'21:09:10'	78.0500	29.5800	32.0300
65	'210425'	'21:09:15'	78.0500	29.5700	32.0100
66	'210425'	'21:09:20'	78.0500	29.5700	32.1300
67	'210425'	'21:09:25'	78.0500	29.5500	32.1700
68	'210425'	'21:09:30'	78.0500	29.5500	32.1700
69	'210425'	'21:09:35'	78.0500	29.5400	32.1500
70	'210425'	'21:09:40'	78.0500	29.5900	34.6600
71	'210425'	'21:09:45'	78.0500	29.7500	36.4900
72	'210425'	'21:09:50'	78.0500	29.8100	37.3400
73	'210425'	'21:09:55'	78.0500	29.9300	38.4900
74	'210425'	'21:10:00'	78.0500	30.0500	38.5400
75	'210425'	'21:10:05'	78.0500	30.1100	36.5100
76	'210425'	'21:10:10'	78.0500	30.1900	39.6000
77	'210425'	'21:10:16'	78.0500	30.2500	38.1200
78	'210425'	'21:10:21'	78.0500	30.3400	38.0900
79	'210425'	'21:10:26'	78.0500	30.2200	33.0600
80	'210425'	'21:10:31'	78.0500	30.1700	32.7600
81	'210425'	'21:10:36'	78.0500	30.1500	33.1000
82	'210425'	'21:10:41'	78.0600	30.1200	32.4500
83	'210425'	'21:10:46'	78.0500	30.0600	31.7200
84	'210425'	'21:10:51'	78.0500	30.0100	32.0400

	Fecha	Hora	Pres_kpa	Temp_C	Hum_perc
85	'210425'	'21:10:56'	78.0500	30.0400	33.9900
86	'210425'	'21:11:01'	78.0600	30.0400	32.7200
87	'210425'	'21:11:06'	78.0500	30.0400	32.8200
88	'210425'	'21:11:11'	78.0500	30.0500	33.4300
89	'210425'	'21:11:16'	78.0500	30.0500	32.3600
90	'210425'	'21:11:21'	78.0500	30.0600	32.3600
91	'210425'	'21:11:26'	78.0500	30.0900	33.1900
92	'210425'	'21:11:31'	78.0500	30.0700	32.0800
93	'210425'	'21:11:36'	78.0500	30.0800	32.1300
94	'210425'	'21:11:41'	78.0500	30.0700	31.6700
95	'210425'	'21:11:46'	78.0600	30.0700	31.8100
96	'210425'	'21:11:51'	78.0500	30.0700	31.8100
97	'210425'	'21:11:56'	78.0500	30.0700	31.5800
98	'210425'	'21:12:01'	78.0500	30.0700	31.8300
99	'210425'	'21:12:06'	78.0600	30.0800	32
100	'210425'	'21:12:11'	78.0500	30.0800	32.2700

⋮

Reordenando

```
%Sólo si importa fecha y hora en dos columnas
atmosfera.DateTime=string(atmosfera.Fecha)+" "+string(atmosfera.Hora);
%Pasar de texto a fecha-hora
atmosfera.DateTime=datetime(atmosfera.DateTime,'Format','yyyyMMdd HH:mm:ss');
```

Limpieza

Tomaremos los datos entre el 18 de mayo y el 26 de mayo a las 6:00 am

```
%Puntos inicial y final en el tiempo
T1=datetime(2021,5,18,6,00,00)
```

```
T1 = datetime
   18-May-2021 06:00:00
```

```
T2=datetime(2021,5,26,6,00,00)
```

```
T2 = datetime
   26-May-2021 06:00:00
```

```
index= atmosfera.DateTime>T1 &...
```

```
    atmosfera.DateTime<T2;

atmosfera_part=atmosfera(index,:);
```

Limpieza de NAN's

```
sum(ismissing(atmosfera_part))
```

```
ans = 1×6
     0     0     0    11    61     0
```

```
summary(atmosfera_part)
```

```
Variables:

    Fecha: 137522×1 cell array of character vectors

    Hora: 137522×1 cell array of character vectors

    Pres_kpa: 137522×1 double

        Values:

            Min         77.55
            Median      78.06
            Max         78.46

    Temp_C: 137522×1 double

        Values:

            Min             13.38
            Median          21.01
            Max             100
            NumMissing      11

    Hum_perc: 137522×1 double

        Values:

            Min             15.27
            Median          50.16
            Max             99.97
            NumMissing      61

    DateTime: 137522×1 datetime

        Values:

            Min       20210518 06:00:03
            Median    20210522 05:59:48
            Max       20210526 05:59:55
```

```
%Remover filas con NaNs
atmosfera_noNaNs=rmmissing(atmosfera_part);
summary(atmosfera_noNaNs)
```

```
Variables:
```

Fecha: 137450×1 cell array of character vectors

Hora: 137450×1 cell array of character vectors

Pres_kpa: 137450×1 double

    Values:

        Min   77.55
        Median   78.06
        Max   78.46

Temp_C: 137450×1 double

    Values:

        Min   13.38
        Median   21.01
        Max   46.86

Hum_perc: 137450×1 double

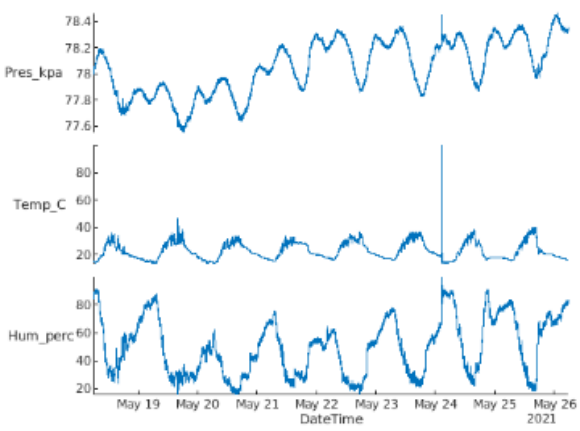
    Values:

        Min   15.27
        Median   50.155
        Max   99.97

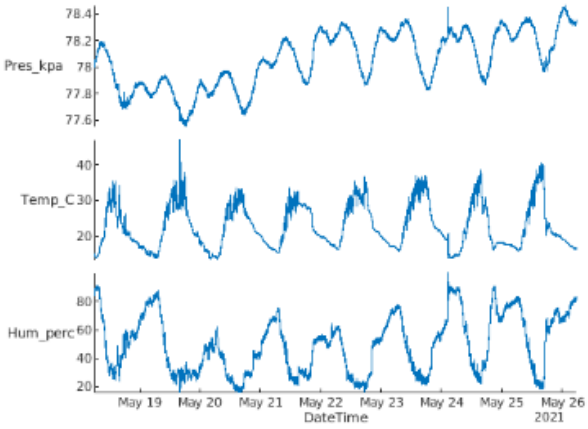
DateTime: 137450×1 datetime

    Values:

        Min   20210518 06:00:03
        Median   20210522 05:57:17
        Max   20210526 05:59:55



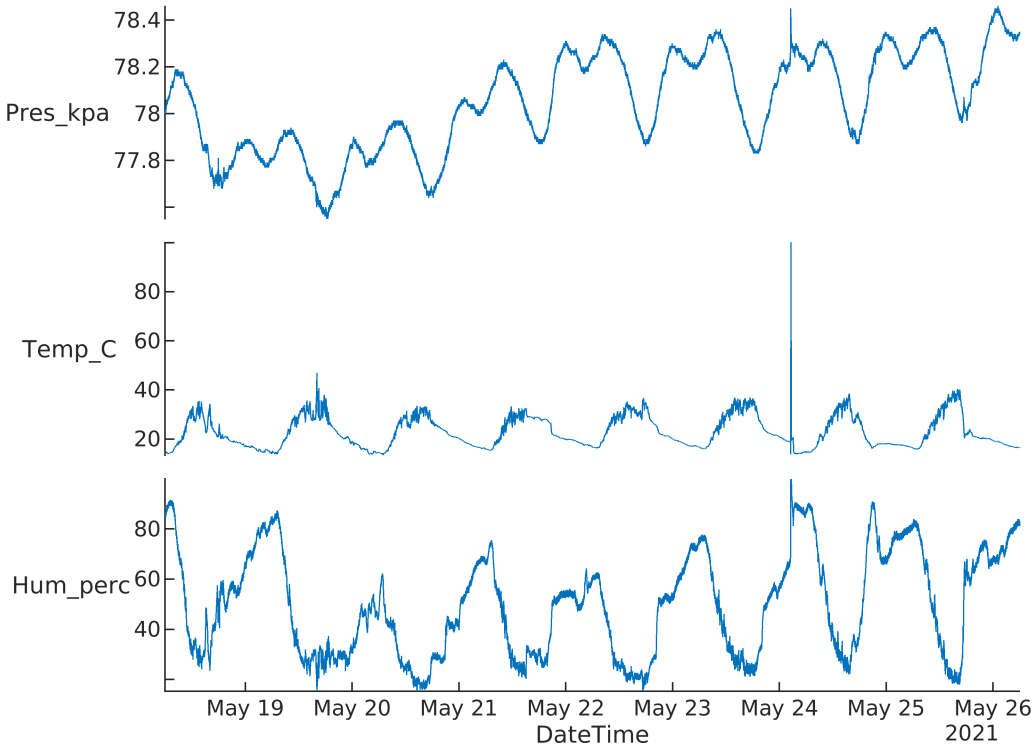
Con NaNs



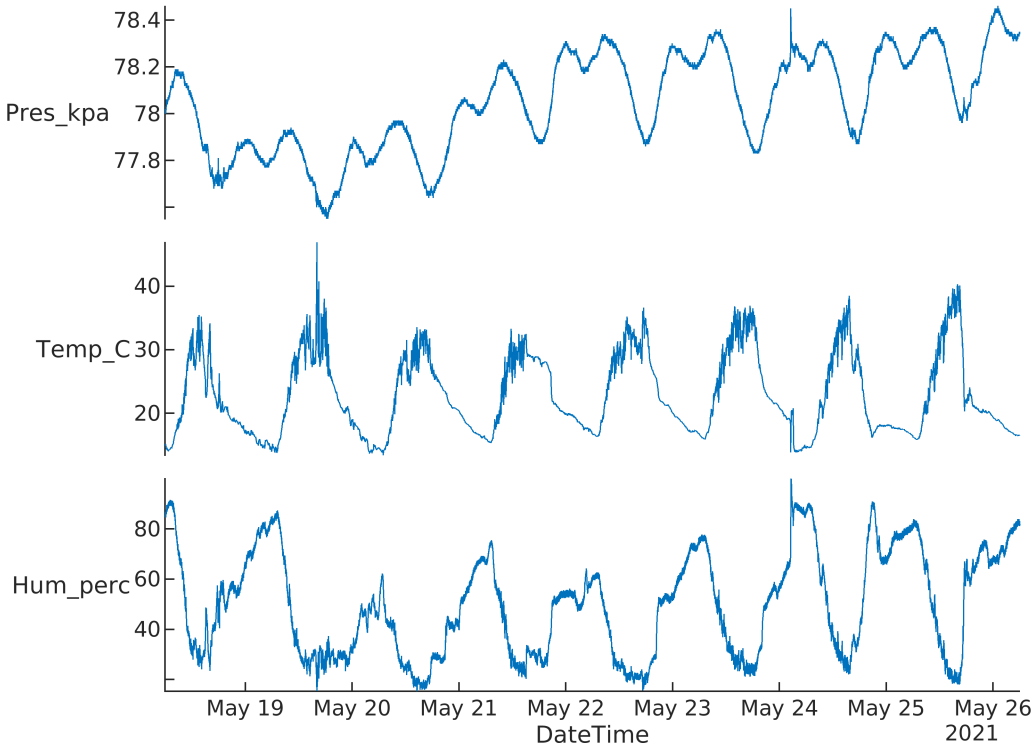
Sin NaNs

Ploteo exploratorio

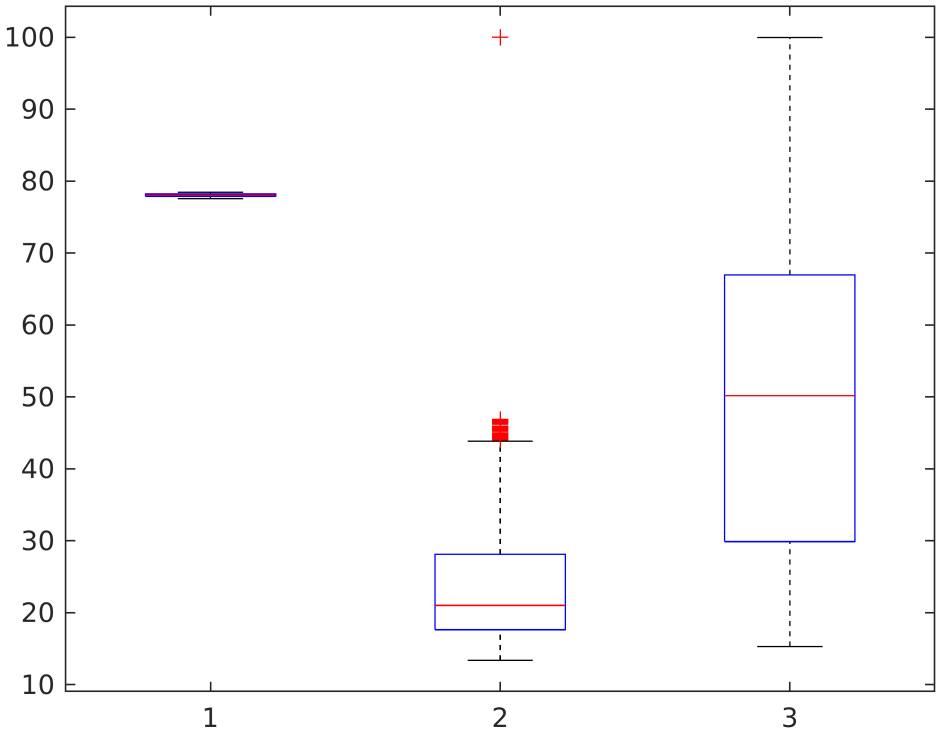
```
figure
stackedplot(atmosfera_part,'XVariable','DateTime')
```




```
figure
stackedplot(atmosfera_noNaNs,'XVariable','DateTime')
```

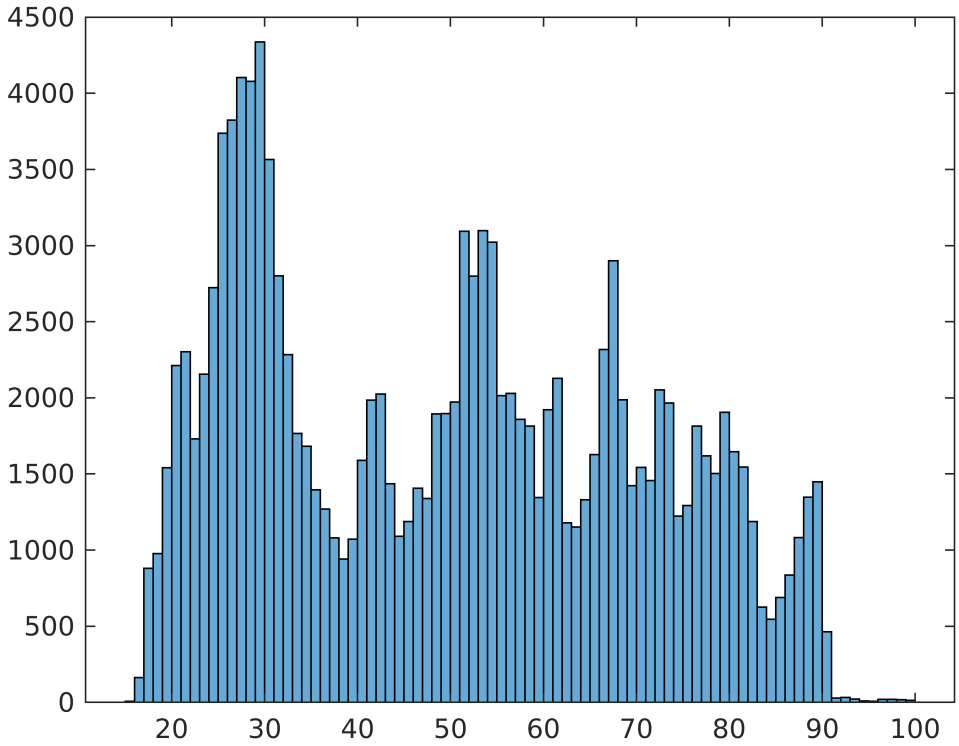



```
figure
boxplot(atmosfera_part{:,["Pres_kpa" "Temp_C" "Hum_perc"]})
```

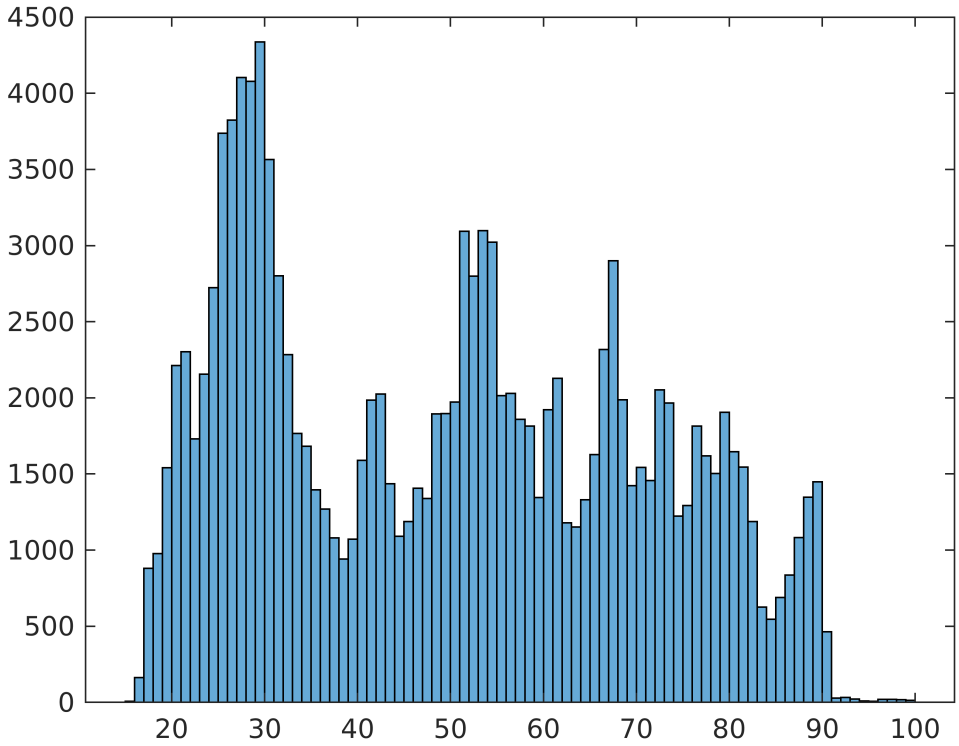


Histograma

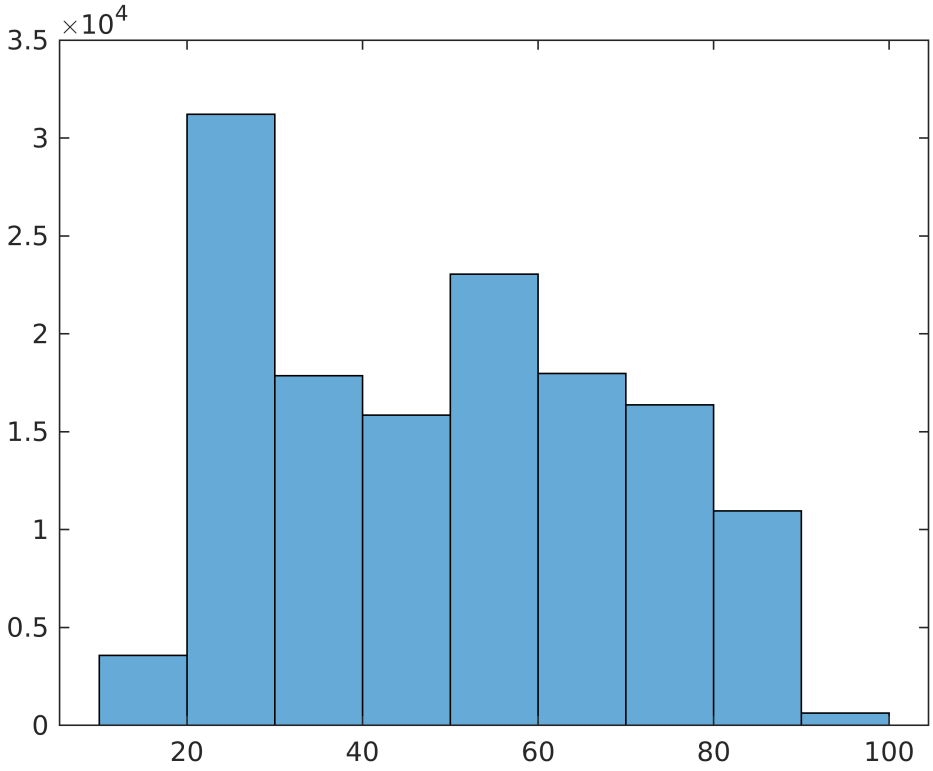
```
figure
histogram(atmosfera_part.Hum_perc)
```




```
figure
histogram(atmosfera_part.Hum_perc,'BinWidth',1)
```

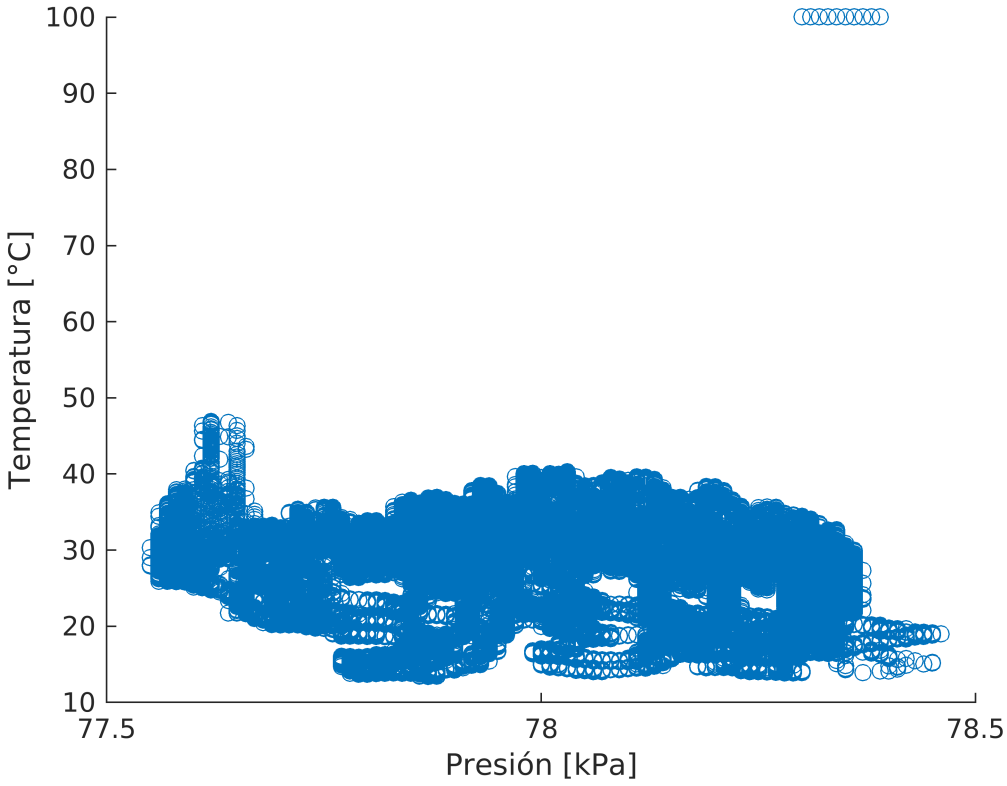



```
figure
histogram(atmosfera_part.Hum_perc,'BinWidth',10)
```

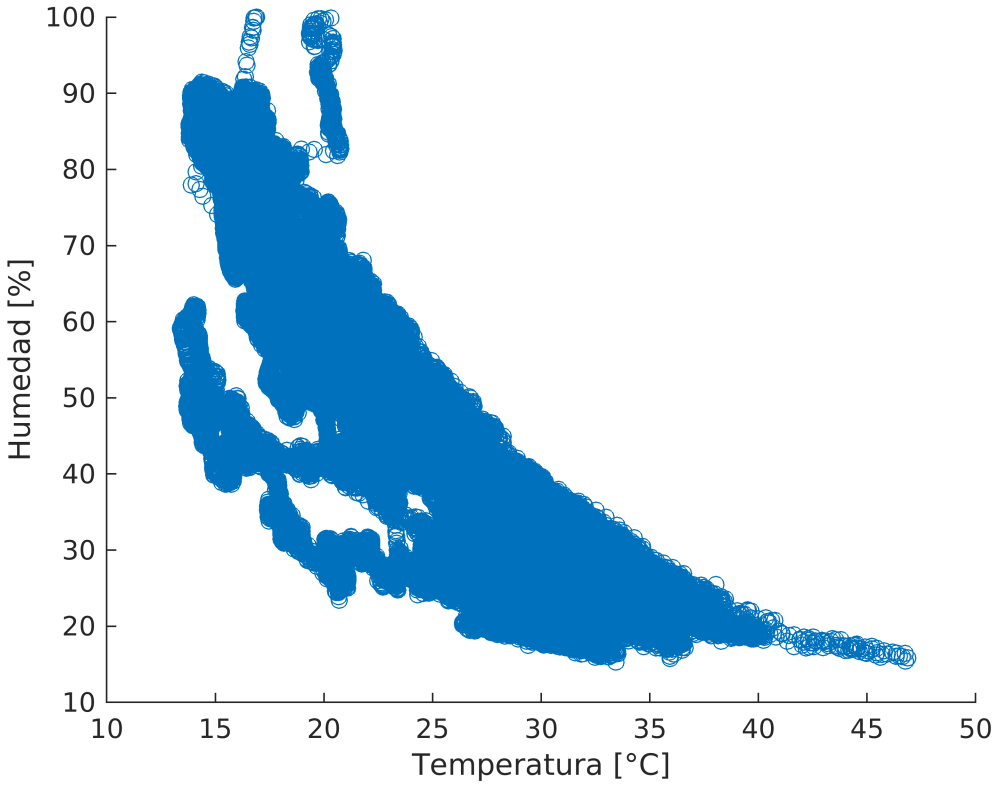


Dispersión

```
scatter(atmosfera_part.Pres_kpa,atmosfera_part.Temp_C)
xlabel("Presión [kPa]")
ylabel("Temperatura [°C]")
```

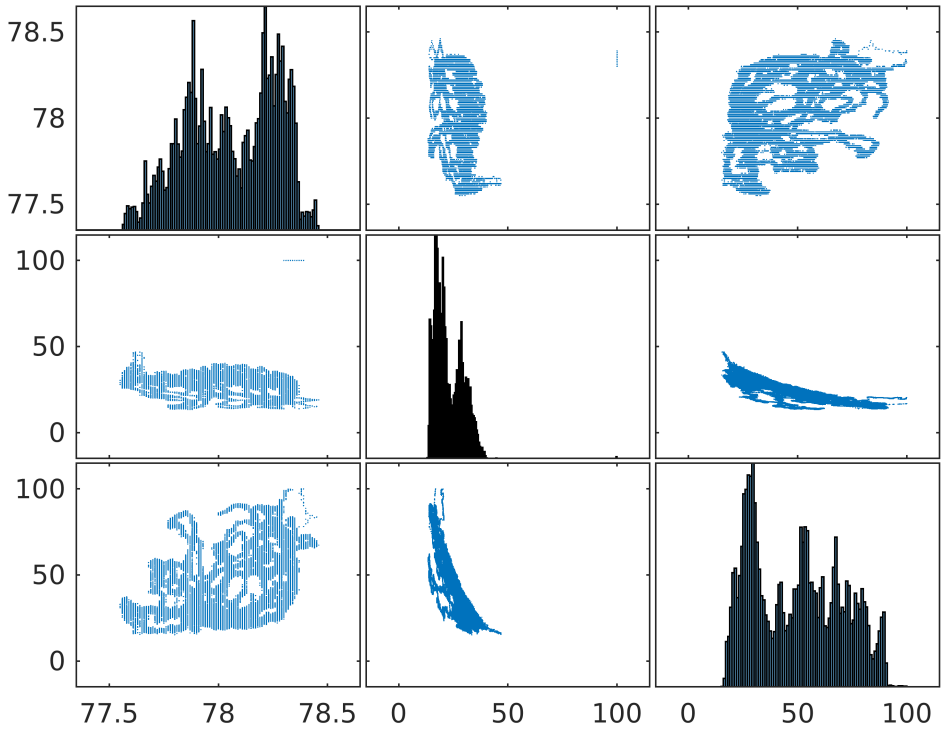



```
scatter(atmosfera_part.Temp_C,atmosfera_part.Hum_perc)
xlabel("Temperatura [°C]")
ylabel("Humedad [%]")
```



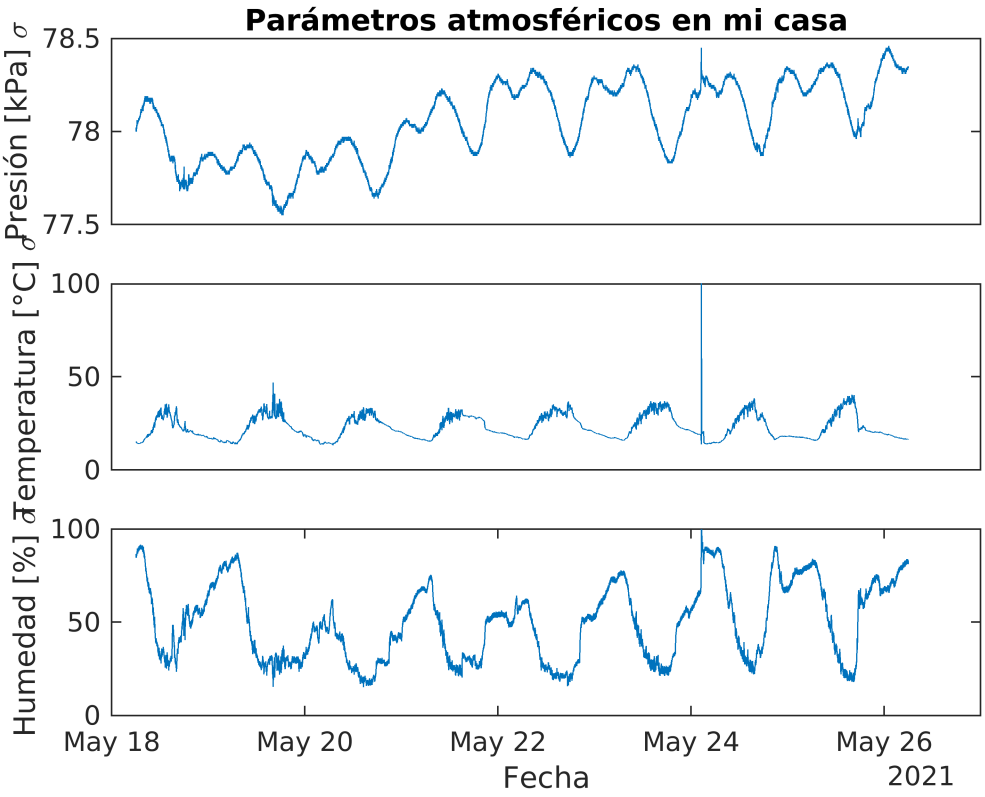
Plot matrix

```
figure
plotmatrix(atmosfera_part{:,["Pres_kpa" "Temp_C" "Hum_perc"]})
```



Tiledlayout

```
tiledlayout(3,1) %o flow
nexttile
plot(atmosfera_part.DateTime,atmosfera_part.Pres_kpa)
ylabel("Presión [kPa] \sigma")
title("Parámetros atmosféricos en mi casa")
set(gca,'xtick',[])

nexttile
plot(atmosfera_part.DateTime,atmosfera_part.Temp_C)
ylabel("Temperatura [°C] \sigma")
set(gca,'xtick',[])

nexttile
plot(atmosfera_part.DateTime,atmosfera_part.Hum_perc)
ylabel("Humedad [%] \sigma")
xlabel("Fecha")
```



Agrupación y orden

```
% Darle categorías a temperatura
%Fronteras de las categorías
edges=[-30 15 20 55]
```

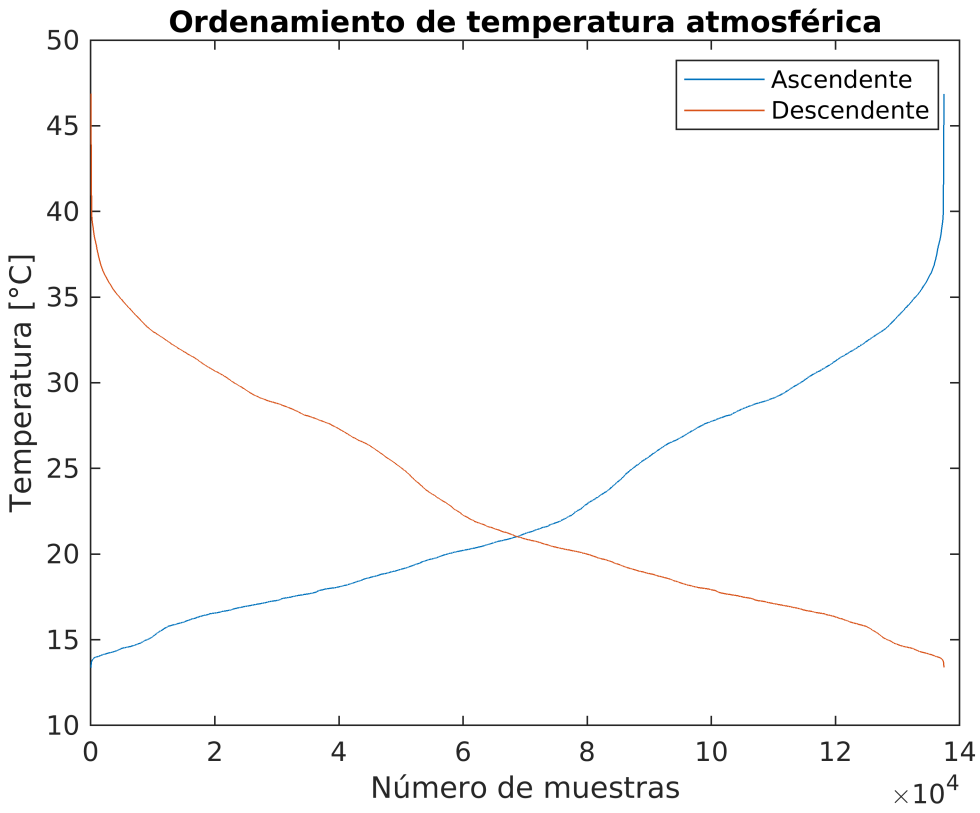
```
edges = 1×4
   -30    15    20    55
```

```
% Categorías
categorias=["Frio" "Templado" "Caliente"]
```

```
categorias = 1×3 string
"Frio"      "Templado"    "Caliente"
```

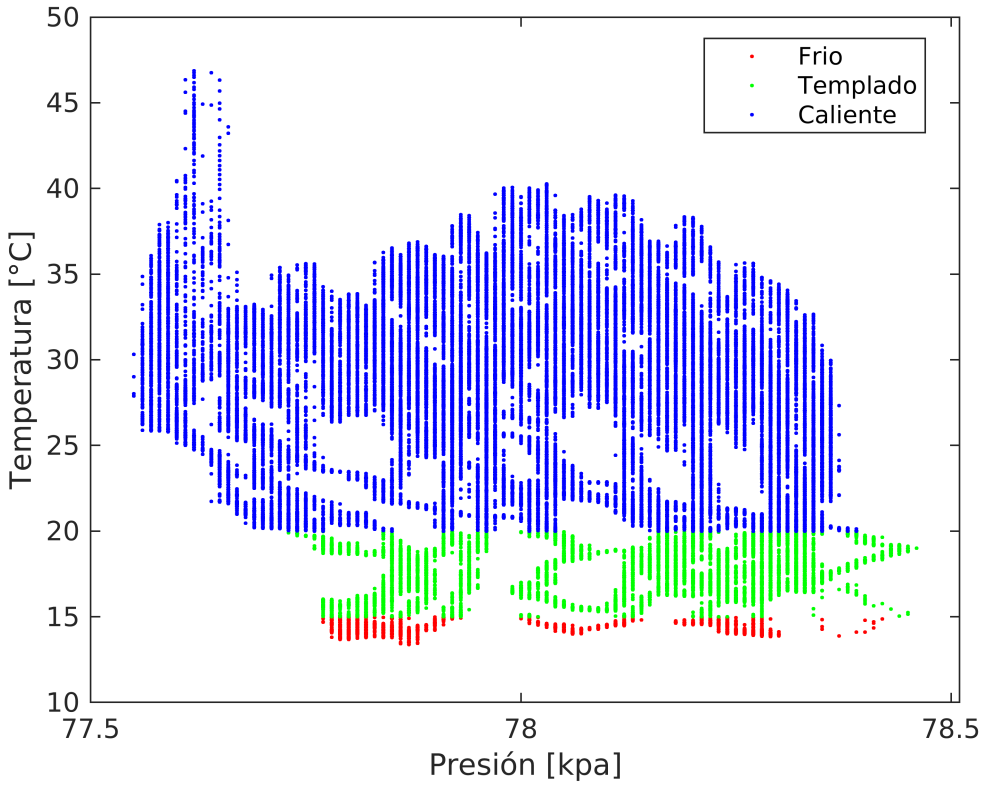
```
%Clasifico las temperaturas con un categórico
temp_cats=discretize(atmosfera_noNaNs.Temp_C,edges,'categorical',categorias);

%Agrego a la tabla original
atmosfera_noNaNs.temp_cats=temp_cats;

%Ordenamiento
temp_Descend=sort(atmosfera_noNaNs.Temp_C,'descend');
temp_Ascend=sort(atmosfera_noNaNs.Temp_C,'ascend');
```

```
figure
plot([temp_Ascend temp_Descend])
ylabel("Temperatura [°C]")
xlabel("Número de muestras")
legend("Ascendente", "Descendente")
title("Ordenamiento de temperatura atmosférica")
```

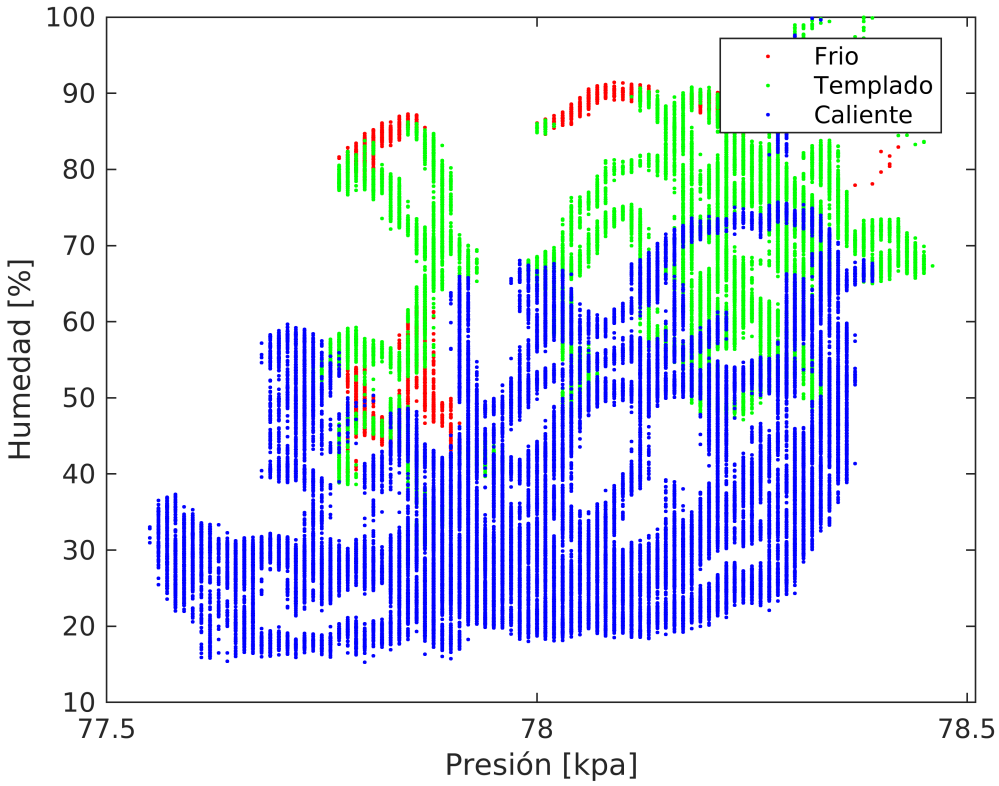


G scatter y pareto chart

```
figure
gscatter(atmosfera_noNaNs.Pres_kpa,atmosfera_noNaNs.Temp_C,atmosfera_noNaNs.temp_cats)
xlabel("Presión [kpa]")
ylabel("Temperatura [°C]")
```

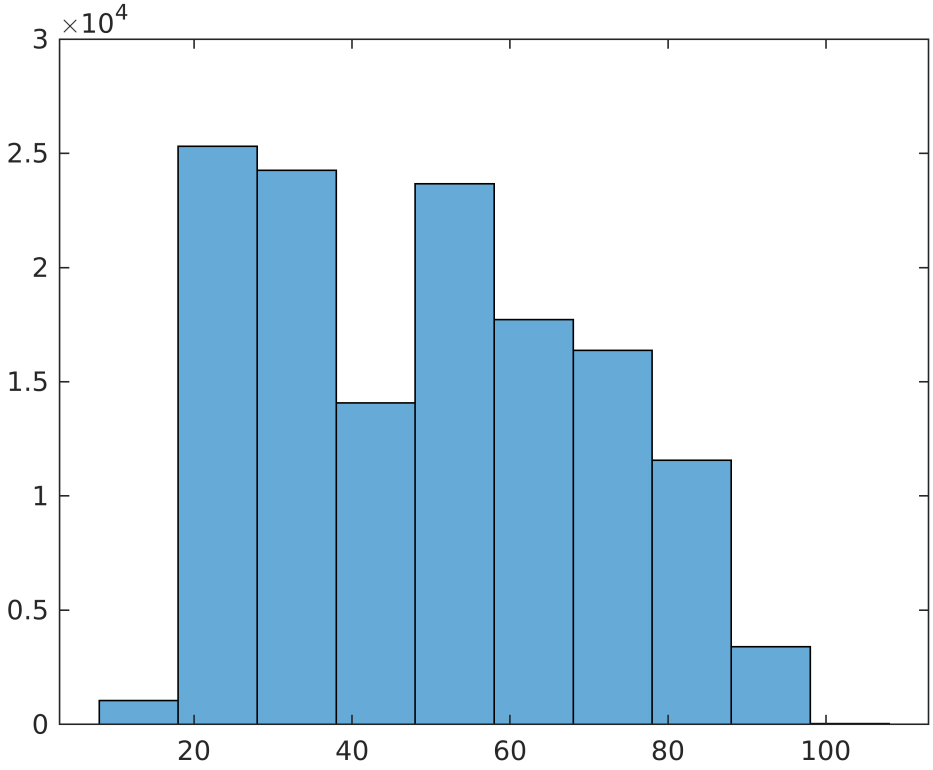



```
figure
gscatter(atmosfera_noNaNs.Pres_kpa,atmosfera_noNaNs.Hum_perc,atmosfera_noNaNs.temp_cats
xlabel("Presión [kpa]")
ylabel("Humedad [%]")
```

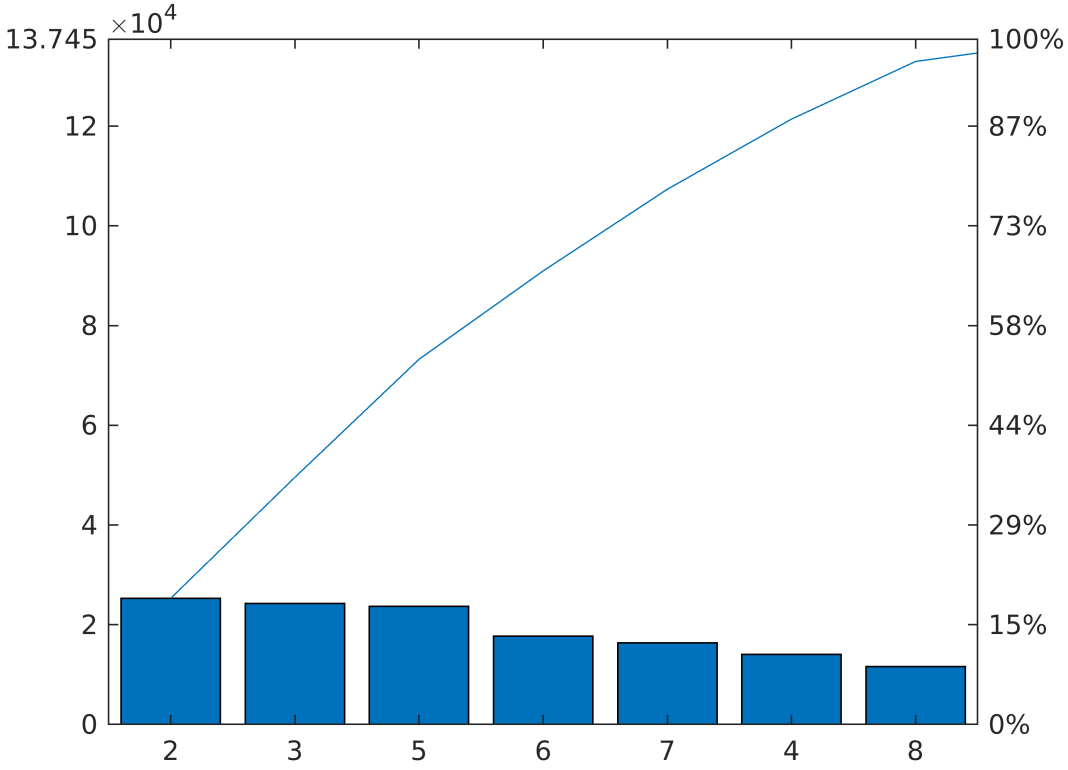


Pareto

```
h=histogram(atmosfera_noNaNs.Hum_perc,10);
```




```
cuentas=h.BinCounts;


figure
pareto(cuentas)
```


13.745
×10^4
12
10
8
6
4
2
0
100%
87%
73%
58%
44%
29%
15%
0%
2
3
5
6
7
4
8