Datasets y visualización

Importar con readtable y readmatrix

```
%readmatrix
area_mm = readmatrix("..\..\Utils4SP\Datasets\areaMM.txt",'Delimiter','    ')
```

```
area_mm = 1×181
  340.4277  324.3750  308.9114  293.6813  277.8073  261.0772  245.9019  232.8705 ···
```

```
%readtable
PSD_bands = readtable("..\..\Utils4SP\Datasets\2021.10.04_IntensidadBobinas.xlsx")
```

```
PSD_bands = 630×13 table
```

	Dist_cm_	PSD_B1	PSD_B2	PSD_B3	PSD_B4	PSD_B5	PSD_B6	PSD_B7
1	0.5000	0.5480	0.0129	0.0052	0.0046	0.0205	1.1388	0.0107
2	0.5000	0.5042	0.0017	0.0022	0.0024	0.0057	0.5872	0.0015
3	0.5000	0.4539	0.0061	0.0016	0.0049	0.0121	0.5663	0.0060
4	0.5000	0.3205	0.0055	0.0052	0.0017	0.0082	0.6285	0.0053
5	0.5000	0.3859	0.0032	0.0026	0.0024	0.0066	0.5744	0.0035
6	0.5000	0.8591	0.0051	0.0020	0.0019	0.0073	0.6579	0.0061
7	0.5000	0.5021	0.0044	0.0020	0.0018	0.0075	0.5880	0.0027
8	0.5000	0.3402	0.0063	0.0067	0.0062	0.0097	0.5597	0.0118
9	0.5000	0.3661	0.0046	0.0020	0.0049	0.0085	0.5586	0.0043
10	0.5000	0.5464	0.0037	0.0016	0.0024	0.0075	0.5924	0.0011
11	0.5000	0.8342	0.0094	0.0025	0.0071	0.0063	0.9233	0.0042
12	0.5000	0.3870	0.0050	0.0017	0.0033	0.0124	1.1173	0.0029
13	0.5000	0.4425	0.0021	0.0005	0.0013	0.0038	0.6084	0.0020
14	0.5000	0.4923	0.0034	0.0009	0.0022	0.0069	0.5943	0.0012

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Función Custom de Import File

```
%Pasa sonda Cassini
%Cassini = importfile_cassini("Utils4SP\Datasets\05358_mrdcd_sdfgmc_krtp_1s.asc")
```

Importar audio

```
%audio read necesita dos salidas
% la primera son las muestras de audio
```

```
% y la segunda es la frecuencia de muestreo
[y,fs] = audioread("Utils4SP\Datasets\Owl.wav")
```

```
y = 38920×2
   -0.0084   -0.0084
   -0.0085   -0.0085
   -0.0088   -0.0087
   -0.0085   -0.0085
   -0.0083   -0.0083
   -0.0084   -0.0083
   -0.0084   -0.0084
   -0.0088   -0.0088
   -0.0088   -0.0089
   -0.0089   -0.0094
      ⋮
fs = 22050
```

```
%mostramos el sonido
sound(y,fs)
```

Datastore

```
% Le indicamos que una carpeta es un datastore, es decir,
% es una carpeta donde hay varios datasets y esto nos
% sirve para que, en lugar de andar concatenando archivo por arhchivo,
% lo hagamos todo al mismo tiempo:
ds = datastore("Utils4SP\Datasets\AtmosferaLogger_V2\")
```

```
ds =
  TabularTextDatastore with properties:

                     Files: {
                            ' ...\Documents\Escuela\Utils4SP\Datasets\AtmosferaLogger_V2\210722.TXT';
                            ' ...\Documents\Escuela\Utils4SP\Datasets\AtmosferaLogger_V2\210723.TXT';
                            ' ...\Documents\Escuela\Utils4SP\Datasets\AtmosferaLogger_V2\210724.TXT'
                             ... and 3 more
                            }
                   Folders: {
                            'C:\Users\AxelE\Documents\Escuela\Utils4SP\Datasets\AtmosferaLogger_V2'
                            }
              FileEncoding: 'UTF-8'
   AlternateFileSystemRoots: {}
         VariableNamingRule: 'modify'
          ReadVariableNames: false
              VariableNames: {'Var1', 'Var2', 'Var3' ... and 3 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 3 more}
                   TextType: 'char'
          ExponentCharacters: 'eEdD'
               CommentStyle: ''
                 Whitespace: '\b'
```

```
    MultipleDelimitersAsOne: true

  Properties that control the table returned by preview, read, readall:
      SelectedVariableNames: {'Var1', 'Var2', 'Var3' ... and 3 more}
            SelectedFormats: {'%f', '%T', '%f' ... and 3 more}
                   ReadSize: 20000 rows
                 OutputType: 'table'
                   RowTimes: []

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

```
% Cambiamos el nombre de los encabezados de cada columna:
ds.VariableNames = ["Fecha" "Hora" "Pres_kpa" "Temp_C" "Hum_perc" "Bat_V"];
%Le cambiamos el tipo de formato de cada columna:
ds.TextscanFormats = ["%s" "%s" "%f" "%f" "%f" "%f"];

%Leemos todas las entradas
atmosfera = readall(ds)
```

atmosfera = 84572×6 table

	Fecha	Hora	Pres_kpa	Temp_C	Hum_perc	Bat_V
1	'210722'	'22:25:18'	78.5700	27.1800	48.4000	4.4800
2	'210722'	'22:25:23'	78.5800	27.3500	48.5300	4.4900
3	'210722'	'22:25:28'	78.5800	27.2800	48.4300	4.4600
4	'210722'	'22:25:33'	78.5800	27.0700	47.9800	4.4500
5	'210722'	'22:25:38'	78.5800	27.0100	48.2000	4.4500
6	'210722'	'22:25:43'	78.5900	26.9100	47.8900	4.4900
7	'210722'	'22:25:48'	78.5800	26.8600	48.7200	4.4700
8	'210722'	'22:25:53'	78.5800	26.8100	48.0300	4.4500
9	'210722'	'22:25:58'	78.5800	26.7700	48.4800	4.4800
10	'210722'	'22:26:03'	78.5800	26.7200	48.3000	4.4700
11	'210722'	'22:26:08'	78.5800	26.6800	48.5600	4.4300
12	'210722'	'22:26:13'	78.5700	26.6400	48.7000	4.4500
13	'210722'	'22:26:18'	78.5700	26.5900	48.4800	4.4500
14	'210722'	'22:26:23'	78.5800	26.5600	48.7100	4.4900
15	'210722'	'22:26:28'	78.5800	26.5100	48.4500	4.4400
16	'210722'	'22:26:33'	78.5700	26.4800	48.5400	4.4500
17	'210722'	'22:26:38'	78.5800	26.4400	48.3600	4.4800
18	'210722'	'22:26:43'	78.5800	26.3900	48.4700	4.4700
19	'210722'	'22:26:48'	78.5800	26.3500	48.8800	4.4500
20	'210722'	'22:26:53'	78.5800	26.3000	48.9000	4.4300
21	'210722'	'22:26:58'	78.5800	26.2500	48.0400	4.4600

	Fecha	Hora	Pres_kpa	Temp_C	Hum_perc	Bat_V
22	'210722'	'22:27:03'	78.5800	26.2000	48.8800	4.4500
23	'210722'	'22:27:08'	78.5900	26.1500	48.7600	4.4800
24	'210722'	'22:27:13'	78.5900	26.1000	48.9700	4.4900
25	'210722'	'22:27:18'	78.5800	26.0600	49.1700	4.4800
26	'210722'	'22:27:23'	78.5800	26.0300	49.4500	4.4500
27	'210722'	'22:27:28'	78.5900	25.9900	49.4300	4.4300
28	'210722'	'22:27:33'	78.5900	25.9400	49.3200	4.4500
29	'210722'	'22:27:38'	78.5800	25.9000	49.3400	4.4500
30	'210722'	'22:27:43'	78.5900	25.8500	49.3700	4.4500
31	'210722'	'22:27:48'	78.5900	25.8100	49.1700	4.4500
32	'210722'	'22:27:53'	78.5900	25.7600	49.5200	4.4800
33	'210722'	'22:27:58'	78.5900	25.7200	49.9800	4.4700
34	'210722'	'22:28:03'	78.5900	25.6600	49.1600	4.4300
35	'210722'	'22:28:08'	78.5900	25.6100	49.9300	4.4500
36	'210722'	'22:28:13'	78.5900	25.5800	49.7900	4.4500
37	'210722'	'22:28:18'	78.5800	25.5200	49.5900	4.4800
38	'210722'	'22:28:23'	78.5900	25.4900	49.9600	4.4600
39	'210722'	'22:28:28'	78.5900	25.4500	50.0400	4.4800
40	'210722'	'22:28:33'	78.5900	25.4200	50.0900	4.4500
41	'210722'	'22:28:38'	78.5900	25.3700	50.1700	4.4800
42	'210722'	'22:28:43'	78.5900	25.3400	49.9100	4.4600
43	'210722'	'22:28:48'	78.5900	25.3000	49.6700	4.4600
44	'210722'	'22:28:53'	78.5900	25.2300	50.8700	4.4800
45	'210722'	'22:28:58'	78.5900	25.2000	50.4600	4.4500
46	'210722'	'22:29:03'	78.5900	25.1500	50.9800	4.4700
47	'210722'	'22:29:08'	78.5900	25.1400	50.5900	4.4500
48	'210722'	'22:29:13'	78.5900	25.0900	50.7900	4.4300
49	'210722'	'22:29:18'	78.6000	25.0600	50.7000	4.4500
50	'210722'	'22:29:23'	78.5900	25.0300	50.9100	4.4500
51	'210722'	'22:29:28'	78.6000	25.0100	50.9700	4.4800
52	'210722'	'22:29:33'	78.6000	24.9700	51.0600	4.4800
53	'210722'	'22:29:38'	78.6000	24.9100	51.1600	4.4800
54	'210722'	'22:29:43'	78.5900	24.8700	52.0100	4.4600

	Fecha	Hora	Pres_kpa	Temp_C	Hum_perc	Bat_V
55	'210722'	'22:29:48'	78.6000	24.8100	51.3300	4.4800
56	'210722'	'22:29:53'	78.6000	24.7900	51.4600	4.4500
57	'210722'	'22:29:58'	78.6000	24.7700	51.4800	4.4400
58	'210722'	'22:30:04'	78.6000	24.7500	51.3400	4.4400
59	'210722'	'22:30:09'	78.5900	24.7300	51.6300	4.4900
60	'210722'	'22:30:14'	78.6000	24.6900	51.6100	4.4700
61	'210722'	'22:30:19'	78.6000	24.6400	51.8100	4.4500
62	'210722'	'22:30:24'	78.5900	24.6000	51.9400	4.4500
63	'210722'	'22:30:29'	78.5900	24.5500	51.6100	4.4600
64	'210722'	'22:30:34'	78.6000	24.5200	52.1700	4.4700
65	'210722'	'22:30:39'	78.6000	24.4900	51.9800	4.5100
66	'210722'	'22:30:44'	78.6000	24.4600	52.8800	4.4500
67	'210722'	'22:30:49'	78.6000	24.4100	52.0100	4.4600
68	'210722'	'22:30:54'	78.6000	24.3800	52.4300	4.4500
69	'210722'	'22:30:59'	78.6000	24.3300	52.2700	4.4500
70	'210722'	'22:31:04'	78.6000	24.2900	52.8000	4.4600
71	'210722'	'22:31:09'	78.6000	24.2500	52.8800	4.4500
72	'210722'	'22:31:14'	78.5900	24.2200	52.6800	4.4300
73	'210722'	'22:31:19'	78.6000	24.2200	52.7400	4.4500
74	'210722'	'22:31:24'	78.6000	24.1800	52.6600	4.4500
75	'210722'	'22:31:29'	78.6000	24.1500	52.9500	4.4600
76	'210722'	'22:31:34'	78.6000	24.1200	52.9400	4.4800
77	'210722'	'22:31:39'	78.6000	24.1000	53.3700	4.4500
78	'210722'	'22:31:44'	78.6000	24.0800	53.0700	4.4500
79	'210722'	'22:31:49'	78.6000	24.0800	52.8300	4.4600
80	'210722'	'22:31:54'	78.5900	24.0500	53.0500	4.4700
81	'210722'	'22:31:59'	78.5900	24.0400	52.6200	4.4800
82	'210722'	'22:32:04'	78.6000	24.0200	53.4400	4.4600
83	'210722'	'22:32:09'	78.6000	24	53.3800	4.4600
84	'210722'	'22:32:14'	78.6000	23.9800	53.2800	4.4500
85	'210722'	'22:32:19'	78.6000	23.9600	53.7100	4.4700
86	'210722'	'22:32:24'	78.6000	23.9300	53.2900	4.4800
87	'210722'	'22:32:29'	78.5900	23.9000	53.1400	4.4500

	Fecha	Hora	Pres_kpa	Temp_C	Hum_perc	Bat_V
88	'210722'	'22:32:34'	78.5900	23.8700	53.8100	4.4300
89	'210722'	'22:32:39'	78.6000	23.8500	53.7200	4.4600
90	'210722'	'22:32:44'	78.6100	23.8200	53.9000	4.4500
91	'210722'	'22:32:49'	78.6100	23.8000	54.0100	4.4600
92	'210722'	'22:32:54'	78.6000	23.7900	53.4300	4.4800
93	'210722'	'22:32:59'	78.6000	23.7600	54.2400	4.4900
94	'210722'	'22:33:04'	78.6000	23.7500	53.9000	4.4900
95	'210722'	'22:33:09'	78.6000	23.7500	54.2800	4.4900
96	'210722'	'22:33:14'	78.6000	23.7500	54	4.4900
97	'210722'	'22:33:19'	78.6000	23.7200	54.6900	4.4300
98	'210722'	'22:33:24'	78.5900	23.7100	54.2100	4.4300
99	'210722'	'22:33:29'	78.6000	23.6700	53.9700	4.4500
100	'210722'	'22:33:34'	78.6000	23.6400	54.3700	4.4700

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Reordenando

```
%Si importamos fecha y hora en dos columnas, la convertimos en una columna de strings
atmosfera.DateTime = string(atmosfera.Fecha) + " " + string(atmosfera.Hora);

%Pasar el texto a formato fecha-hora:
atmosfera.DateTime = datetime(atmosfera.DateTime,'Format',"yyyyMMdd HH:mm:ss");

% Lo siguiente es por si queremos cambiar el nombre de los encabezados
% después de importar las tablas:
% atmosfera.Properties.VariableNames = ["Fecha" "Hora" "Pres_kpa" "Temp_C" "Hum_perc" "Bat_V"]
```