

R Notebook

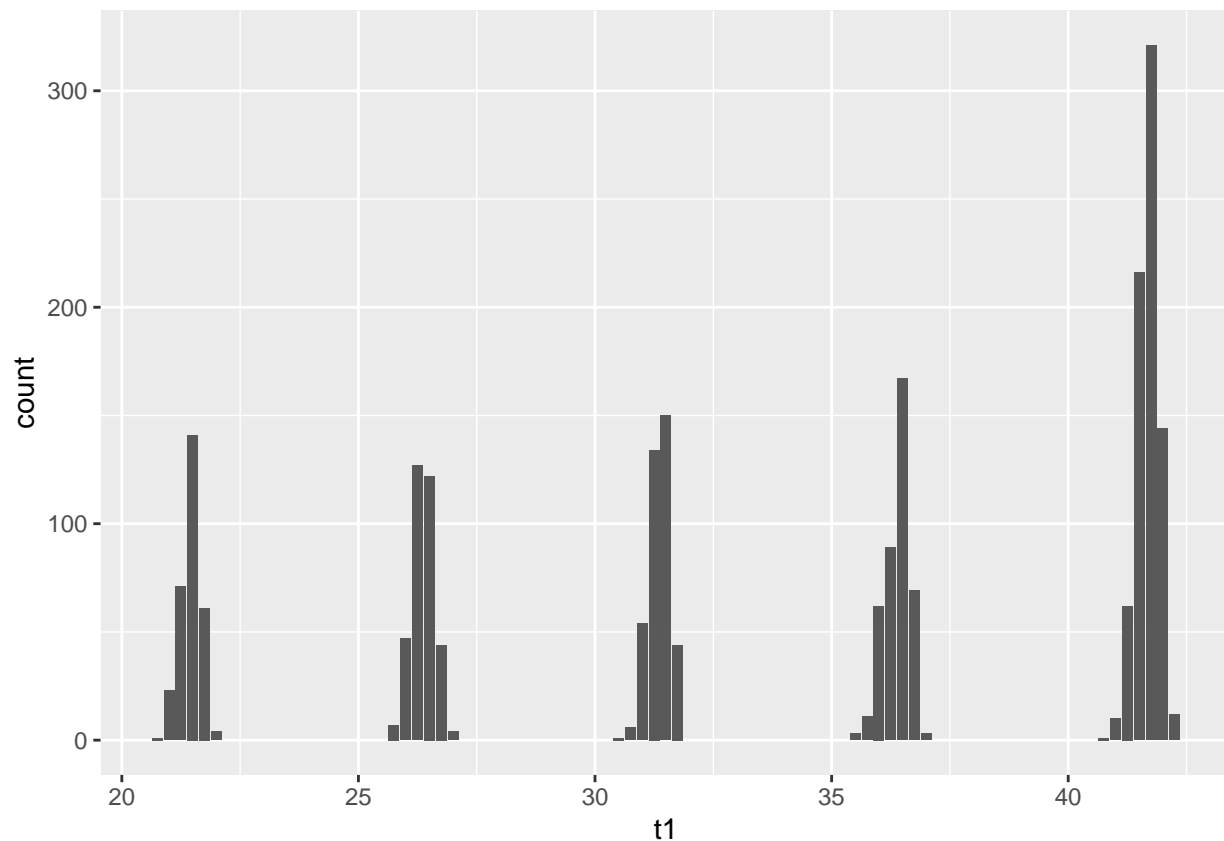
This is an R Markdown Notebook. When you execute code within the notebook, the results appear beneath the code.

Try executing this chunk by clicking the *Run* button within the chunk or by placing your cursor inside it and pressing *Ctrl+Shift+Enter*.

```
##
## Anexando pacote: 'lubridate'

## Os seguintes objetos são mascarados por 'package:base':
##
##      date, intersect, setdiff, union

##           horario    t1    t2    t3    t4    t5    t6
## 1 1970-01-01 15:05:29 21.25 21.50 20.75 22.00 21.75 21.50
## 2 1970-01-01 15:05:30 21.25 21.50 20.25 22.25 21.50 21.75
## 3 1970-01-01 15:05:31 21.50 21.50 20.50 22.25 21.75 21.50
## 4 1970-01-01 15:05:32 21.75 21.00 20.50 22.25 21.50 21.50
## 5 1970-01-01 15:05:33 21.50 21.50 21.00 22.50 21.50 21.25
## 6 1970-01-01 15:05:34 21.75 21.25 21.00 22.50 22.00 21.00
```



Separando ensaios em dataframes diferentes

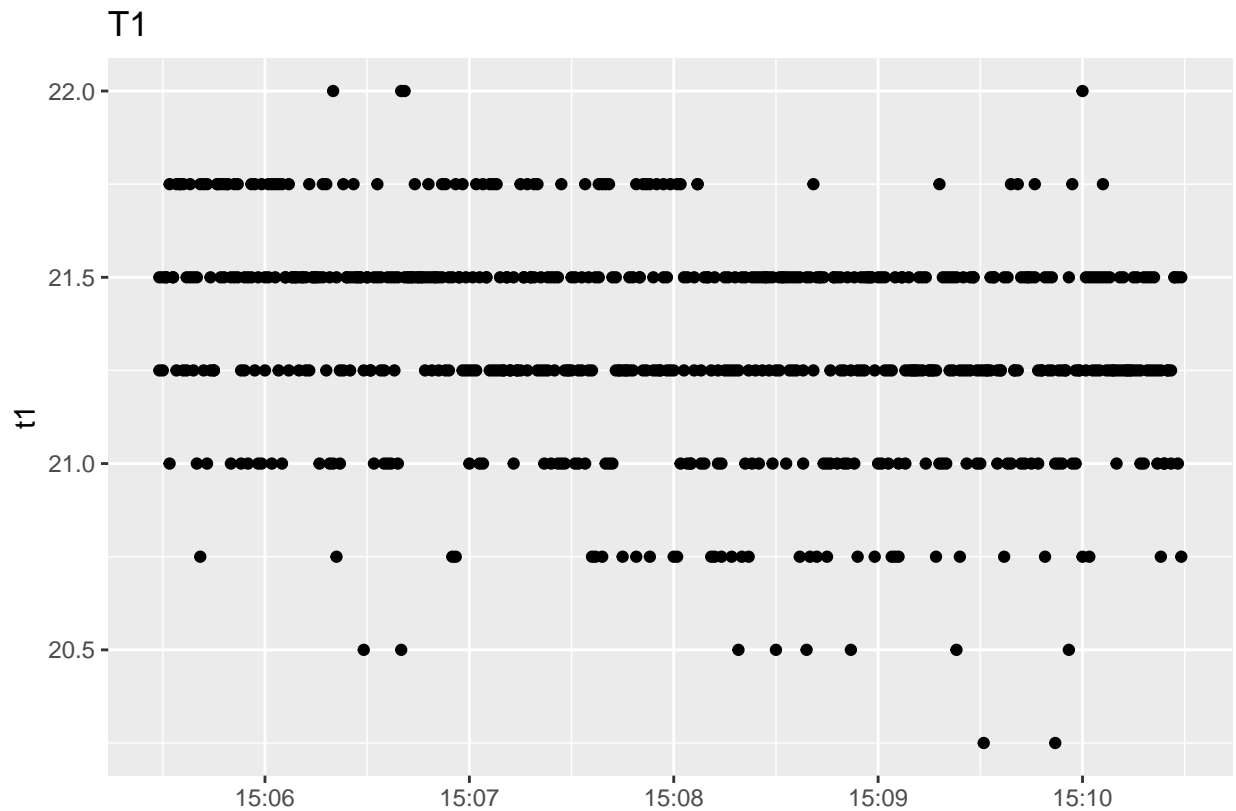
```
##          horario    t1    t2    t3    t4    t5    t6
## 296 1970-01-01 15:10:24 21.00 21.00 20.75 22.25 21.25 21.50
## 297 1970-01-01 15:10:25 21.25 21.25 21.00 21.75 21.25 21.75
## 298 1970-01-01 15:10:26 21.00 21.25 20.50 22.25 21.75 21.25
## 299 1970-01-01 15:10:27 21.50 21.50 20.75 21.75 21.25 21.75
## 300 1970-01-01 15:10:28 21.50 21.00 20.50 21.75 21.50 21.75
## 301 1970-01-01 15:10:29 21.50 20.75 20.50 22.00 21.25 21.25
```

```
##          horario    t1    t2    t3    t4    t5    t6
## 647 1970-01-01 15:39:17 26.25 26.50 25.75 26.75 26.50 26.75
## 648 1970-01-01 15:39:18 26.75 26.25 25.75 27.25 26.25 26.00
## 649 1970-01-01 15:39:19 26.50 26.25 25.25 27.00 26.50 26.00
## 650 1970-01-01 15:39:20 26.75 26.50 26.00 27.25 26.50 26.50
## 651 1970-01-01 15:39:21 26.00 26.50 25.75 27.25 26.00 26.25
## 652 1970-01-01 15:39:22 26.75 26.25 24.75 27.25 26.75 26.50
```

```
##          horario    t1    t2    t3    t4    t5    t6
## 1036 1970-01-01 16:01:20 31.25 30.50 29.00 32.25 31.50 31.25
## 1037 1970-01-01 16:01:21 31.50 30.25 29.25 32.25 31.25 31.25
## 1038 1970-01-01 16:01:22 31.50 30.75 29.50 32.25 31.00 31.25
## 1039 1970-01-01 16:01:23 31.50 30.75 29.75 31.75 31.00 31.00
## 1040 1970-01-01 16:01:24 31.50 31.00 30.00 32.25 31.50 31.25
## 1041 1970-01-01 16:01:25 31.75 30.75 29.50 32.25 31.25 31.00
```

##		horario	t1	t2	t3	t4	t5	t6
## 1440	1970-01-01	19:28:52	36.50	36.00	34.50	37.25	36.50	36.00
## 1441	1970-01-01	19:28:53	36.50	35.50	34.25	37.50	36.50	36.00
## 1442	1970-01-01	19:28:54	36.75	35.50	34.25	37.00	36.75	36.00
## 1443	1970-01-01	19:28:55	36.50	36.00	34.00	37.00	36.75	36.25
## 1444	1970-01-01	19:28:56	36.50	36.25	34.25	37.00	36.25	36.00
## 1445	1970-01-01	19:28:57	36.50	35.75	34.25	37.25	36.75	36.25

##		horario	t1	t2	t3	t4	t5	t6
## 2206	1970-01-01	20:04:25	42.00	41.25	39.25	42.00	41.75	41.00
## 2207	1970-01-01	20:04:26	42.00	41.00	39.50	42.75	41.75	41.25
## 2208	1970-01-01	20:04:27	41.50	41.00	39.75	42.25	41.75	41.25
## 2209	1970-01-01	20:04:28	41.50	41.00	39.75	42.25	41.50	41.50
## 2210	1970-01-01	20:04:29	41.75	40.75	39.00	42.50	40.75	41.25
## 2211	1970-01-01	20:04:30	41.50	41.25	39.25	42.75	41.50	41.50



Media dos ensaios

##	t1	t2	t3	t4	t5	t6
##	21.45764	21.19020	20.75498	22.00498	21.51412	21.51827

##	t1	t2	t3	t4	t5	t6
##	26.36467	26.09758	25.51211	26.85114	26.24430	26.24430

```
##      t1      t2      t3      t4      t5      t6
## 31.35861 30.74550 29.54563 31.88303 31.14267 31.01028
```

```
##      t1      t2      t3      t4      t5      t6
## 36.38676 35.76176 34.25928 37.10087 36.33106 36.08168
```

```
##      t1      t2      t3      t4      t5      t6
## 41.68277 40.98368 39.48564 42.39360 41.56560 41.23107
```

Erro Absoluto

- ea1 -> ensaio 1 (20°C)
- ea2 -> ensaio 2 (25°C) ...
- ea5 -> ensaio 5 (40°C)

Erro relativo

Média da diferença entre medidas e máxima diferença entre medidas de cada ensaio

```
## [1] "Ensaio 1 (20 C)"
```

```
## [1] 0.4050388
```

```
## [1] 1.25
```

```
## [1] "Ensaio 2 (25 C)"
```

```
## [1] 0.4164688
```

```
## [1] 1.339031
```

```
## [1] "Ensaio 3 (30 C)"
```

```
## [1] 0.506391
```

```
## [1] 1.428663
```

```
## [1] "Ensaio 4 (35 C)"
```

```
## [1] 0.4958402
```

```
## [1] 1.360149
```

```
## [1] "Ensaio 5 (40 C)"
```

```
## [1] 0.6571113
```

```
## [1] 1.879243
```