blabla

Rappels sur le modèle linéaire

On considèrera le modèle suivant :

$$\mathbb{E}(y|x) = \beta_0 + \beta_1 + \varepsilon.$$

```
> head(cars)
```

```
  speed dist
1     4    2
2     4   10
3     7    4
4     7   22
5     8   16
6     9   10
```

```
> summary(cars)
```

```
     speed           dist       
 Min.   : 4.0   Min.   :  2.00  
 1st Qu. :12.0   1st Qu. : 26.00  
 Median :15.0   Median : 36.00  
 Mean   :15.4   Mean   : 42.98  
 3rd Qu. :19.0   3rd Qu. : 56.00  
 Max.   :25.0   Max.   :120.00  
```

```
> summary(lm(dist ~ speed, data = cars))
```

```
Call :
lm(formula = dist ~ speed, data = cars)

Residuals :
    Min      1Q  Median      3Q     Max 
-29.069  -9.525  -2.272   9.215  43.201 

Coefficients :
            Estimate Std. Error t value Pr(>|t|)
(Intercept) -17.5791     6.7584  -2.601   0.0123 *
speed         3.9324     0.4155   9.464 1.49e-12 ***
---
Signif. codes :  0 ’***’ 0.001 ’**’ 0.01 ’*’ 0.05 ’.’ 0.1 ’ ’ 1
```

```
Residual standard error : 15.38 on 48 degrees of freedom
Multiple R-squared :  0.6511,    Adjusted R-squared :  0.6438
F-statistic : 89.57 on 1 and 48 DF,  p-value : 1.49e-12
```