

# Identificação de Modelos ARMA( $p,q$ )

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September 16, 2020

## Importando dados

```
load('data/stuff.RData')
```

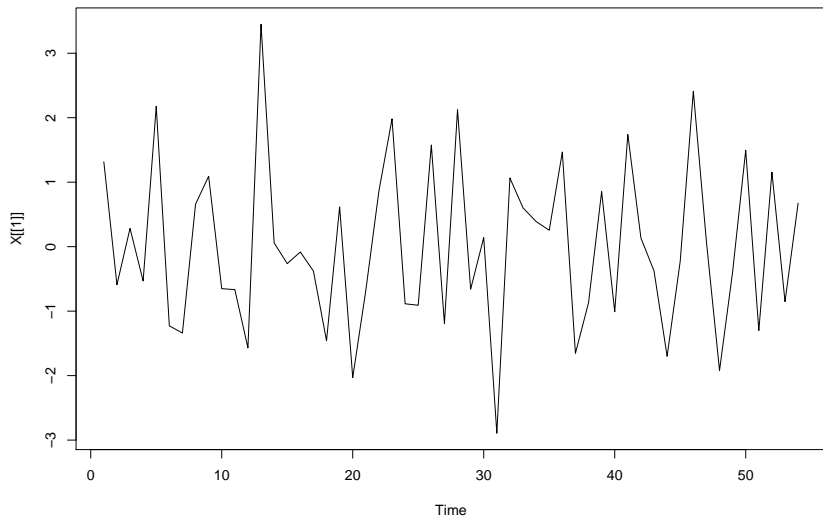
# Metodologia

- ▶ Olhar para ACF e PACF segundo a tabela:

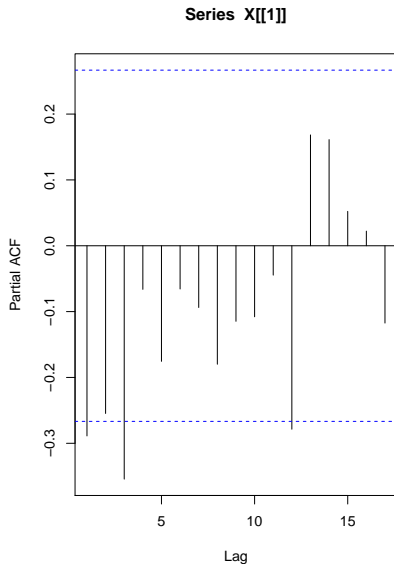
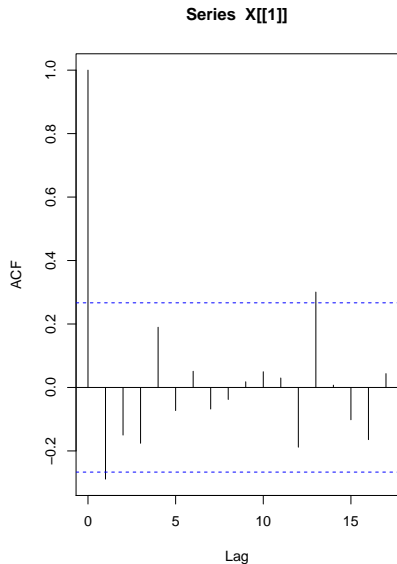
Modelo	ACF	PACF
AR( $p$ )	Decai exp	Corte $> p$
MA( $q$ )	Corte $> q$	Decai exp
ARMA( $p, q$ )	Decai exp $> q - p$	Decai exp

- ▶ Olhar coeficientes dos modelos;
- ▶ Olhar ACF e PACF dos resíduos.

# Série 1

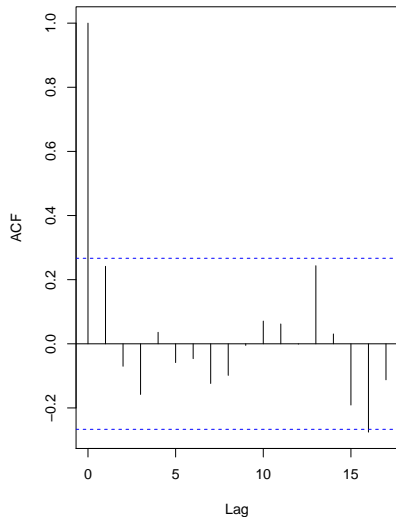


# ACF e PACF

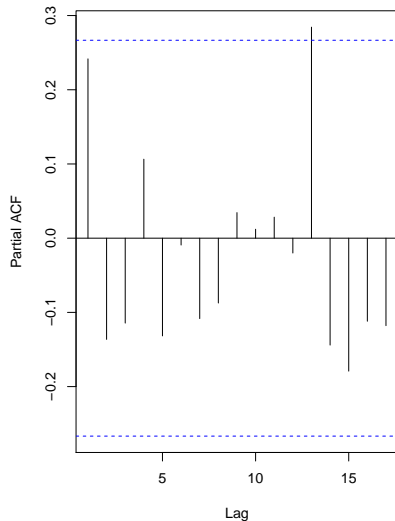


# MA(1)

Series fit\$residuals



Series fit\$residuals



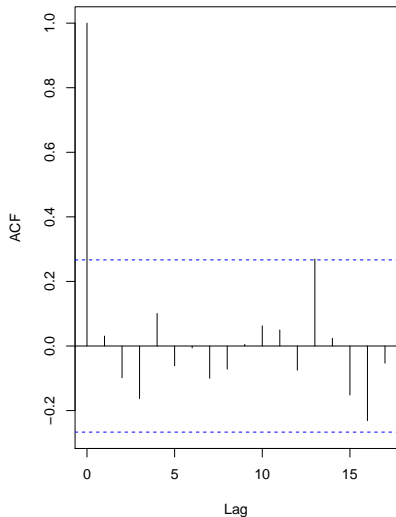
# MA(1)

```
fit
```

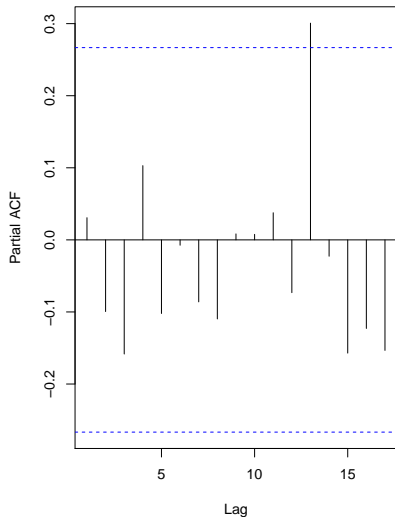
```
##  
## Call:  
## arima(x = X[[1]], order = c(0, 0, 1))  
##  
## Coefficients:  
##          ma1  intercept  
##        -1.0000   -0.0199  
## s.e.    0.0583    0.0089  
##  
## sigma^2 estimated as 1.086:  log likelihood = -80.84,  aic = 167.69
```

# ARMA(1,1)

Series fit\$residuals



Series fit\$residuals





# ARMA(1,1)

```
fit
```

```
##  
## Call:  
## arima(x = X[[1]], order = c(1, 0, 1))  
##  
## Coefficients:  
##          ar1          ma1  intercept  
##      0.2496   -1.0000    -0.0190  
## s.e.  0.1347    0.0515     0.0113  
##  
## sigma^2 estimated as 1.029:  log likelihood = -79.16,  aic = 166.32
```

# Modelo

- ▶ Podemos observar que ambos os gráficos tem decaimento exponencial.
- ▶ Pela ACF,  $q - p = 0$ .
- ▶ Notamos que  $MA(1)$  também é um bom modelo.
- ▶ O coeficiente de AR é pequeno em relação ao do MA.
- ▶ Propomos  $ARMA(1, 1)$