

# Cálculo da PLD

## Análise dos dados da entrada

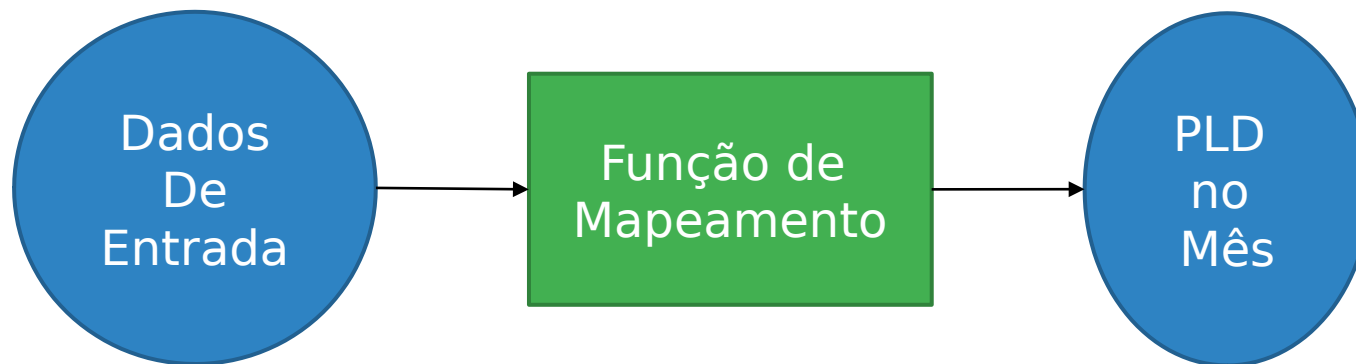
Nome: Felipe Claudio da Silva Santos

Orientador: Luiz Pereira Calôba

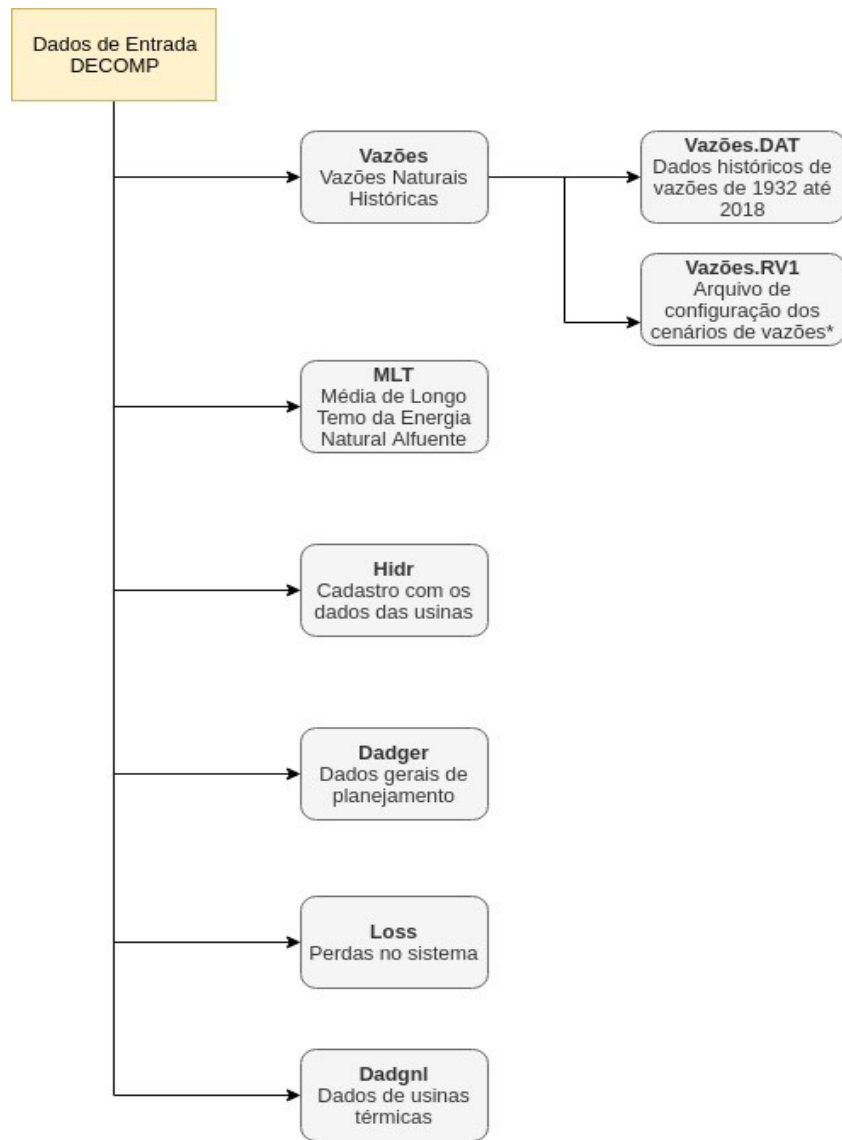
Co-orientador: Natanael Nunes de Moura Junior

# Objetivo

- ▶ Obter a função de mapeamento utilizada para estimar o PLD do mês atual a partir dos dados fornecidos publicamente.



# Informações sobre os dados utilizados

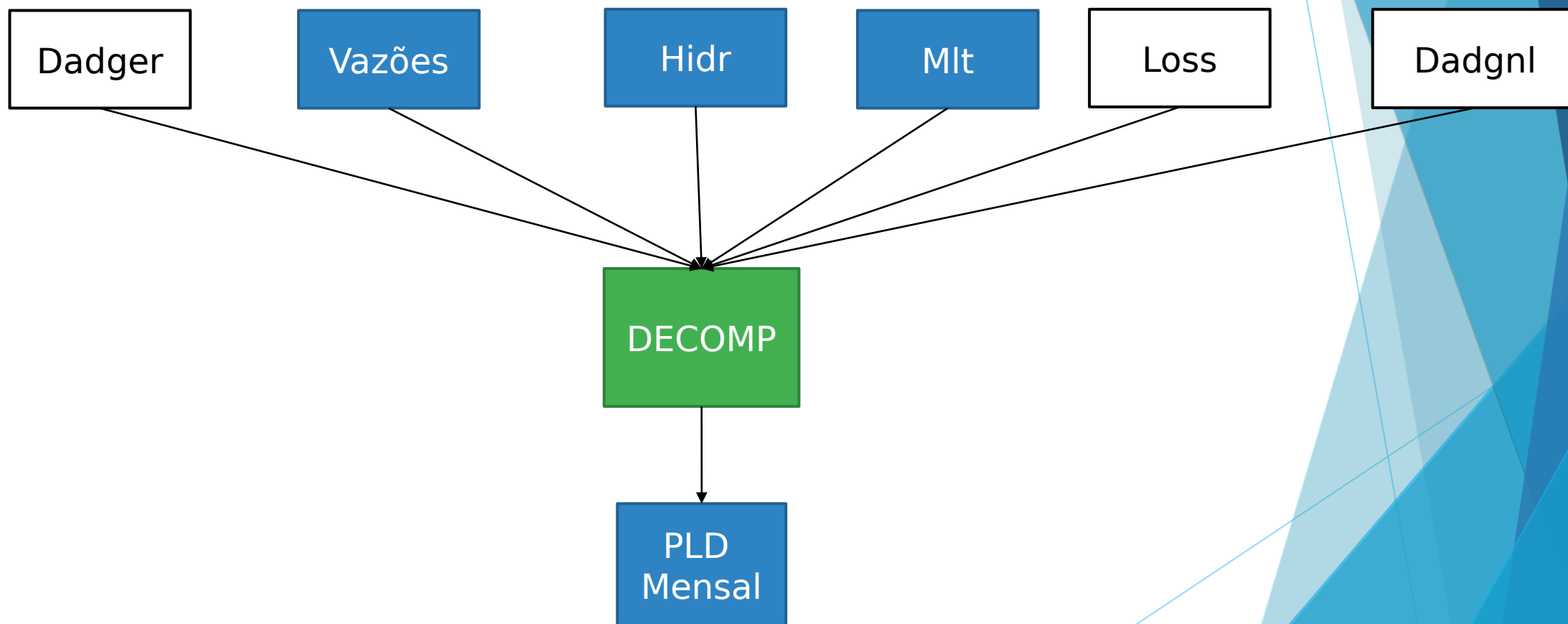


Fontes de dados:

- CCEE (Dados públicos) [1]
- Informações sobre os dados [2] [3]

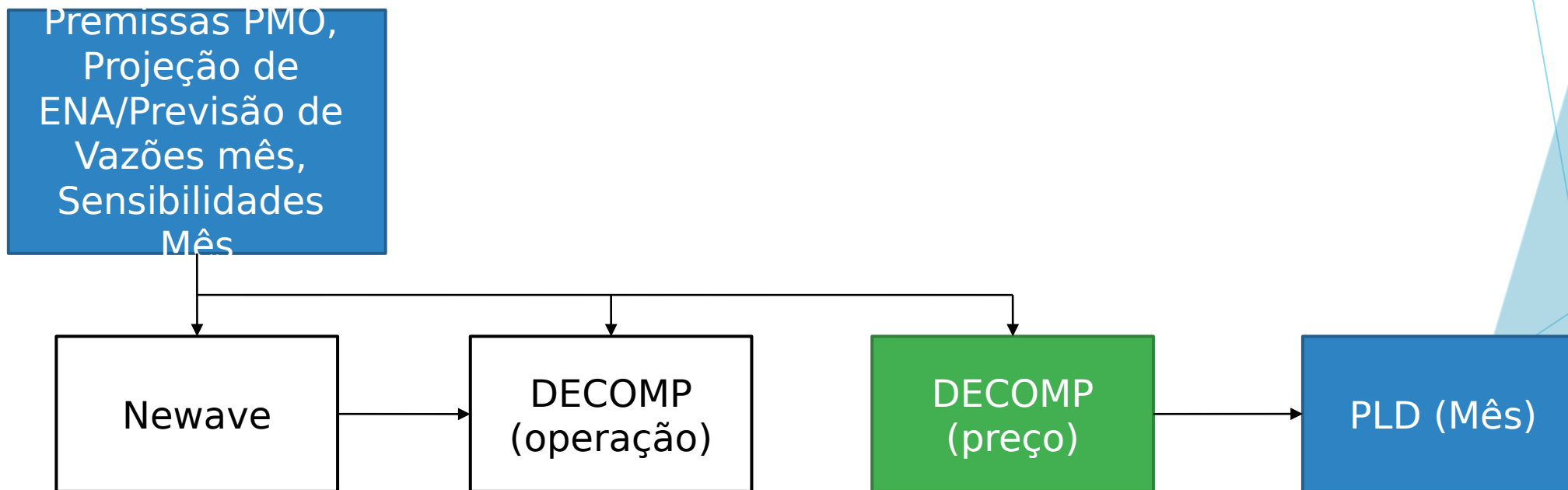
Todos os dados utilizados são da região Sudeste/Centro-Oeste (SE/CO) para Outubro/2018

# Arquivos de entrada Utilizados



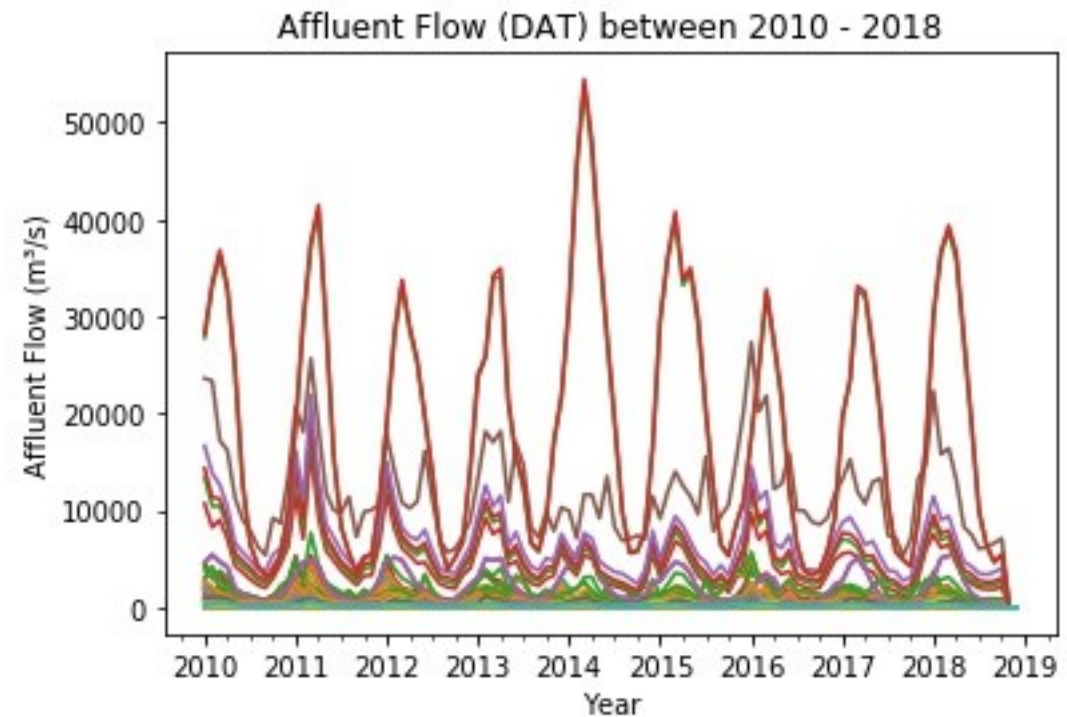
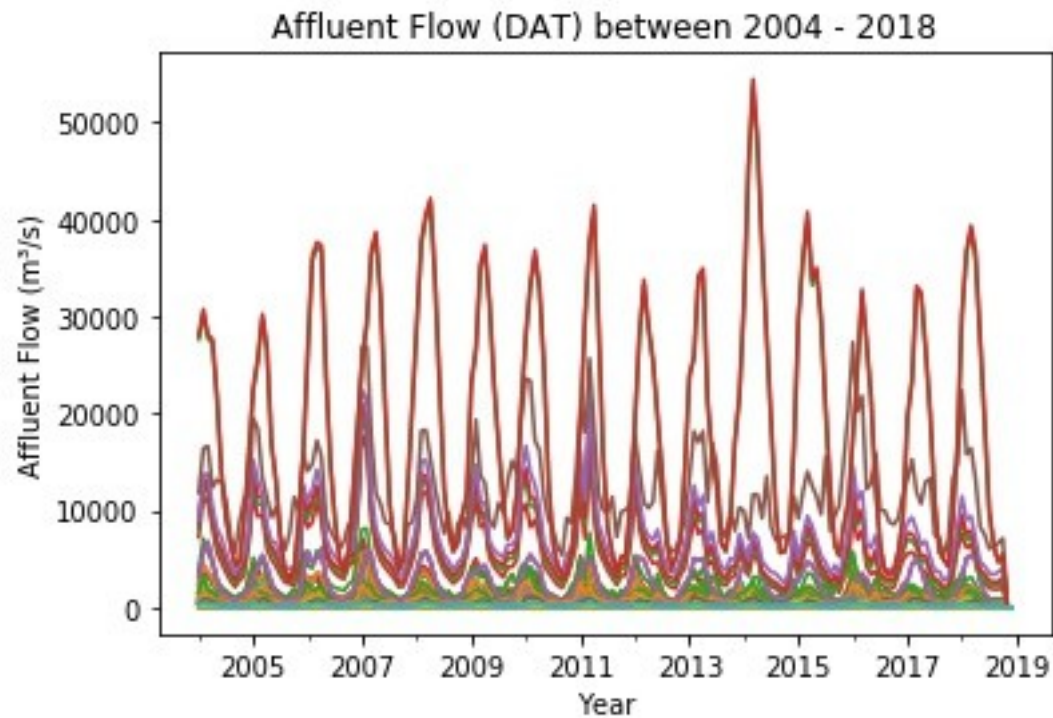
# Dados de Entrada

- ▶ Serão utilizadas as entradas do modelo **DECOMP** preço para o mês atual:



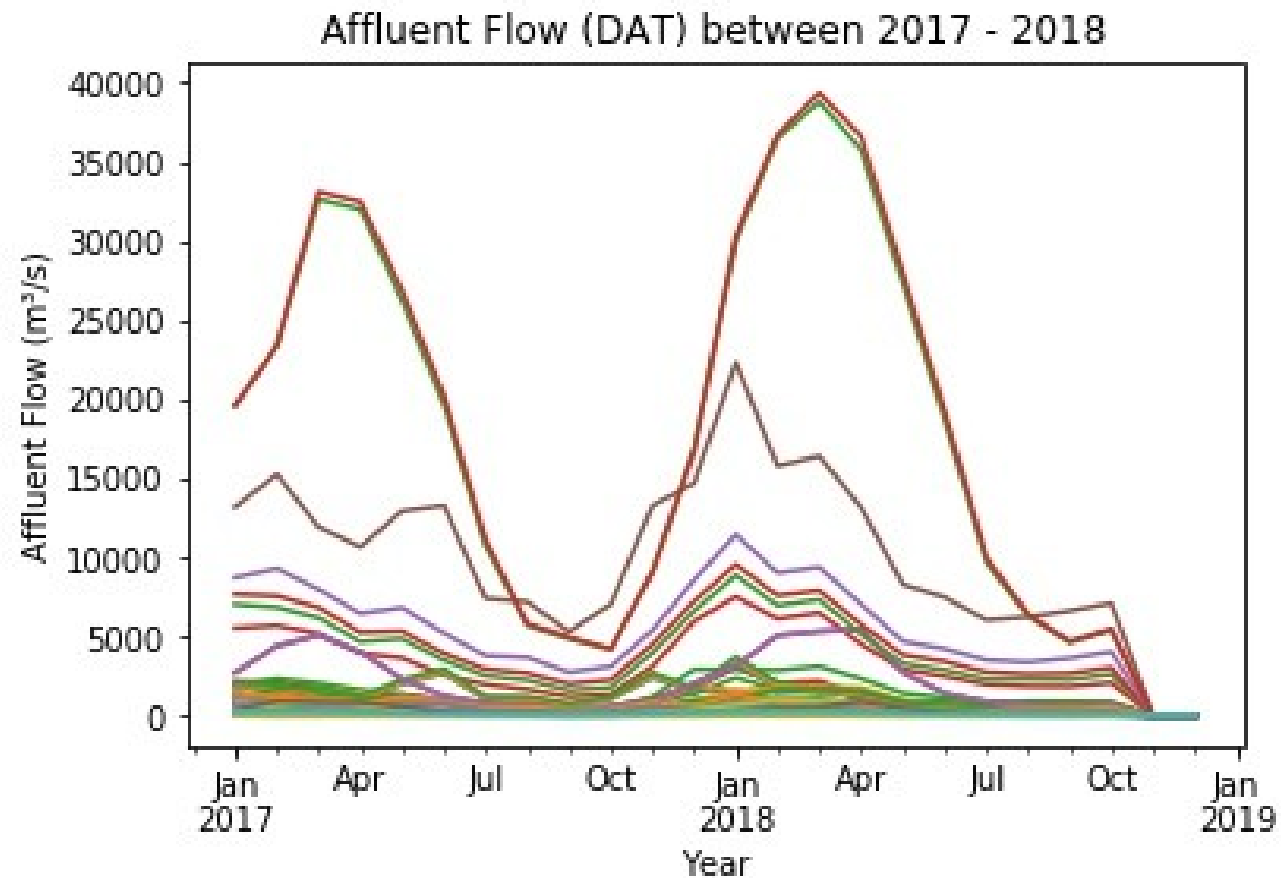
# Séries Temporais

## ► Vazões.DAT



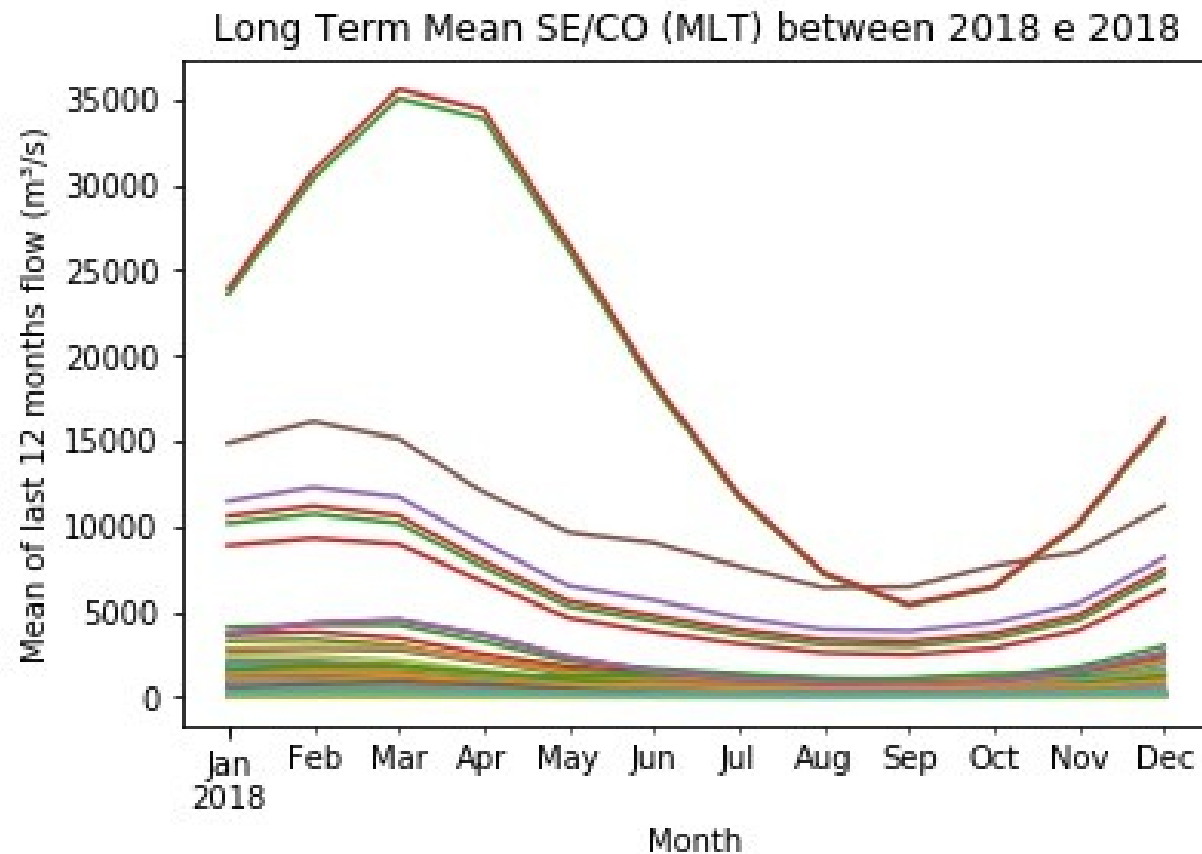
# Séries Temporais

## ► Vazões.DAT



# Séries Temporais

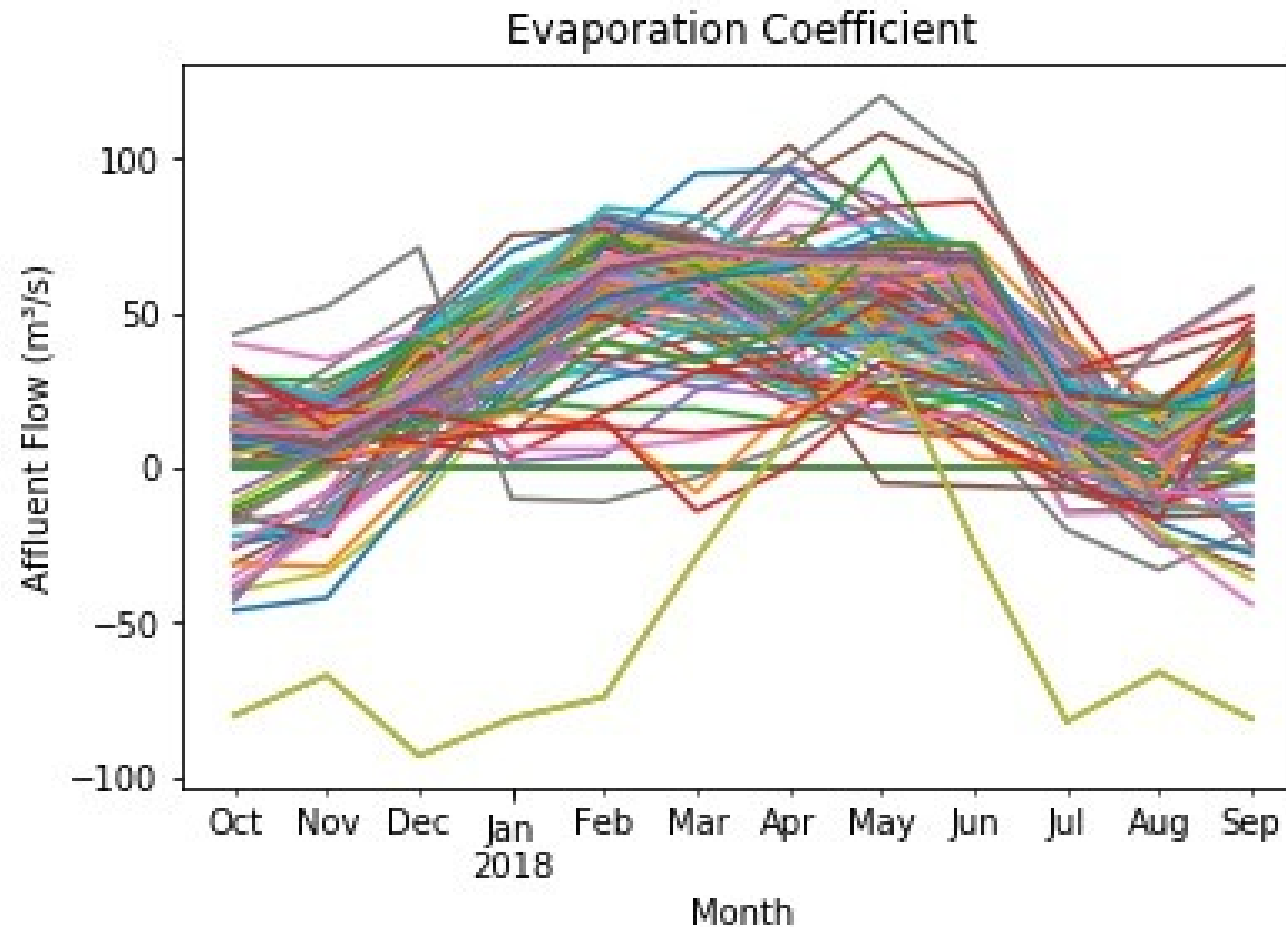
## ► Média de Longo Termo





# Séries Temporais

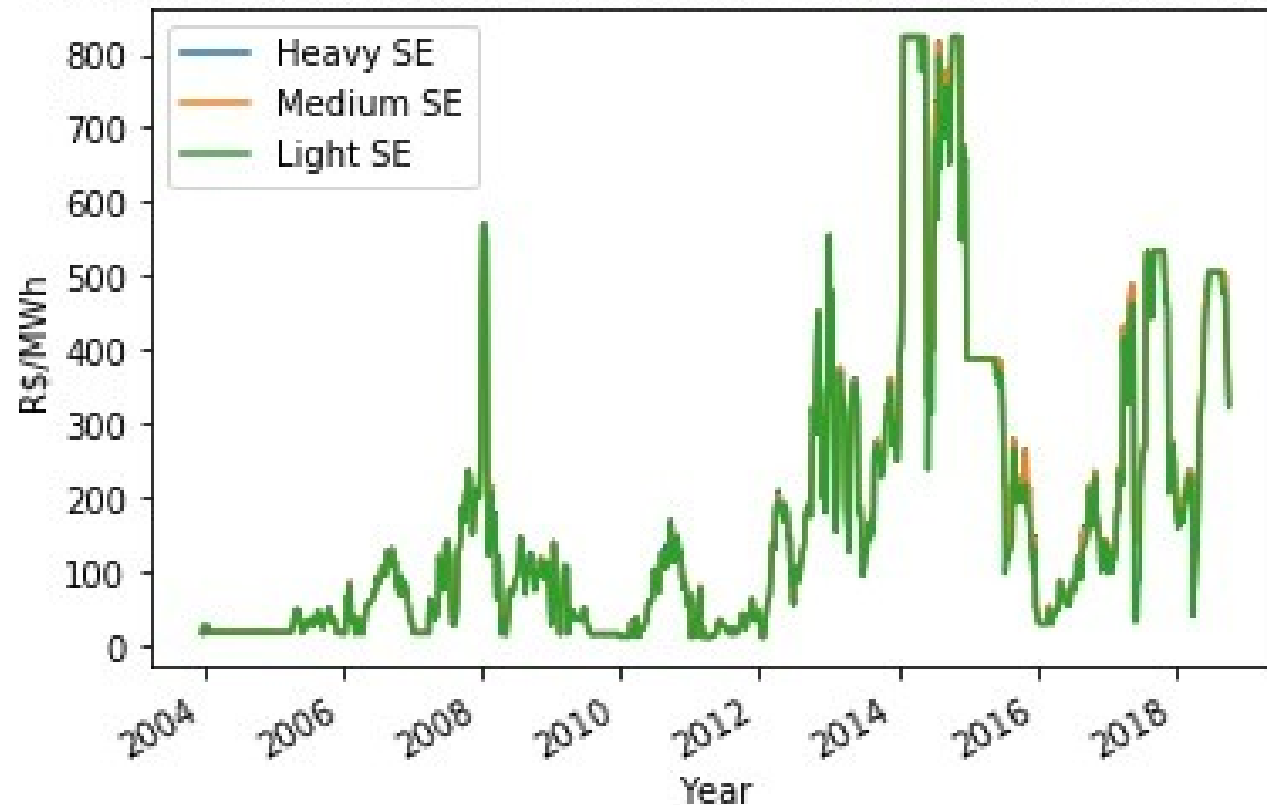
## ► Evaporação



# Séries Temporais

## ► PLD Semanal

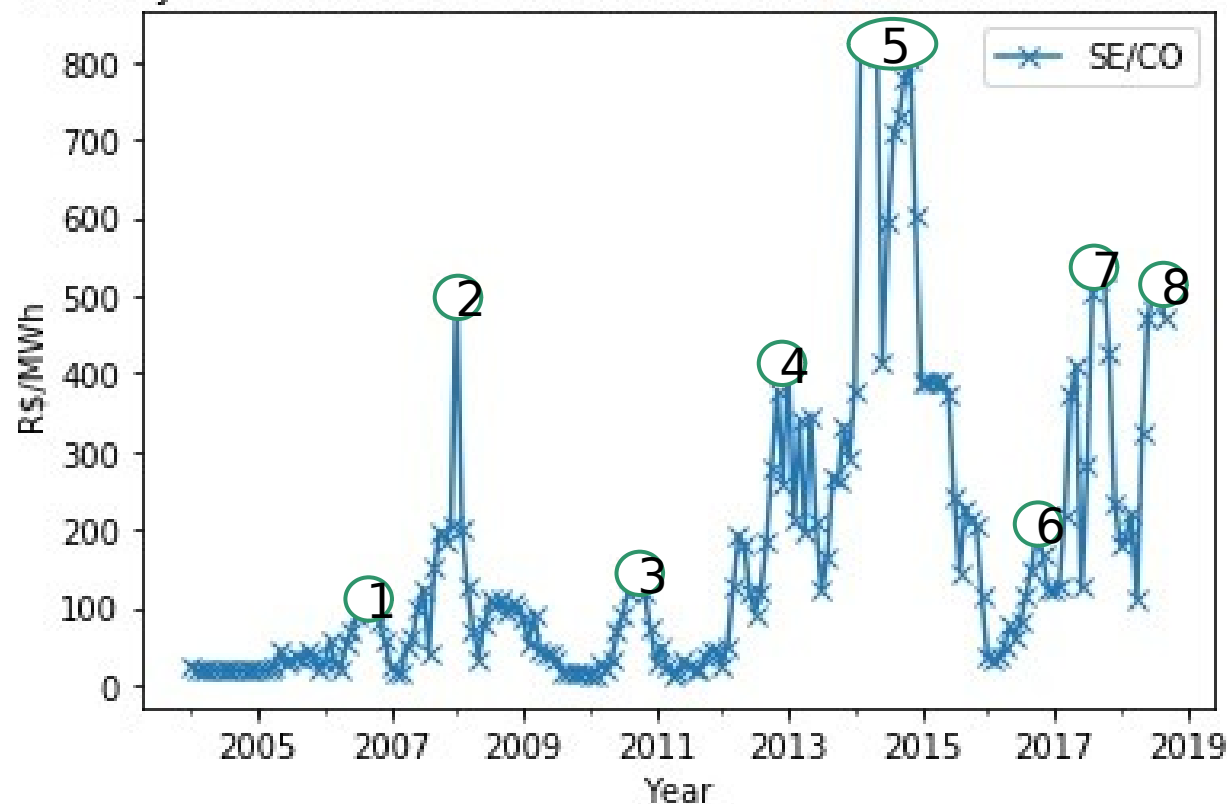
Weekly Settlement Price of Differences (PLD) between 2004 - 2018



# Séries Temporais

## ► PLD Mensal

Monthly Settlement Price of Differences (PLD) between 2004 - 2018

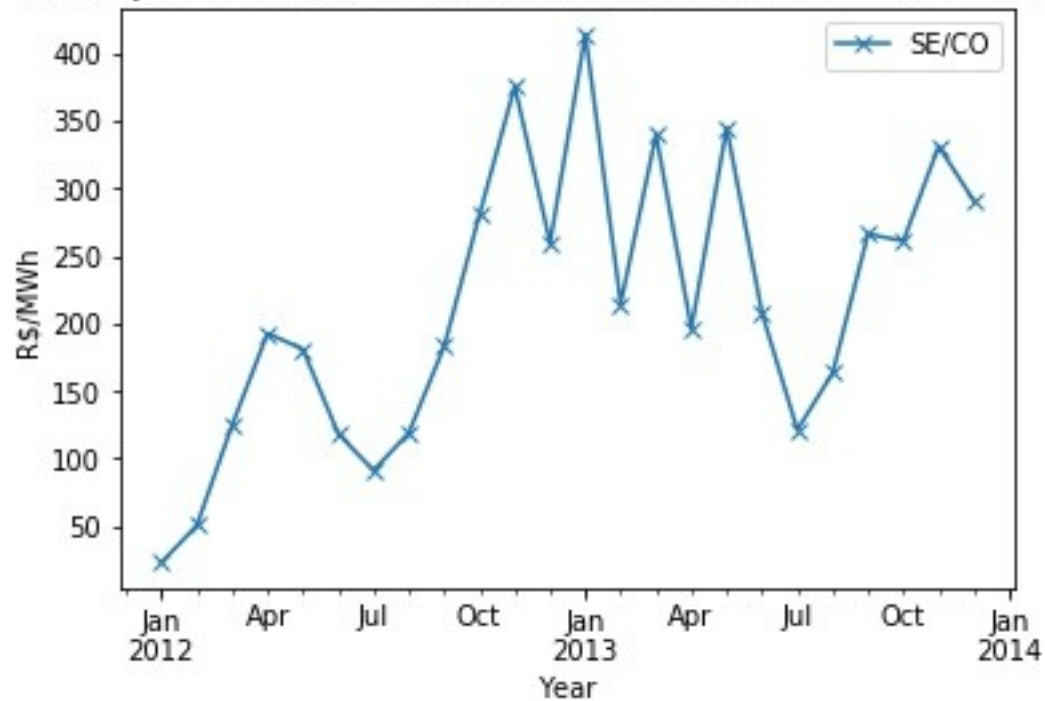


- **Eleições: 1, 4, 5, 8**
- **Crise financeira mundial: 2**
- **Seca no nordeste: 4**
- **Seca no sudeste: 4, 5**
- **Entre 2012 e 2017 chuvas irregulares (SU, CO, NE): 4, 5, 6, 7**

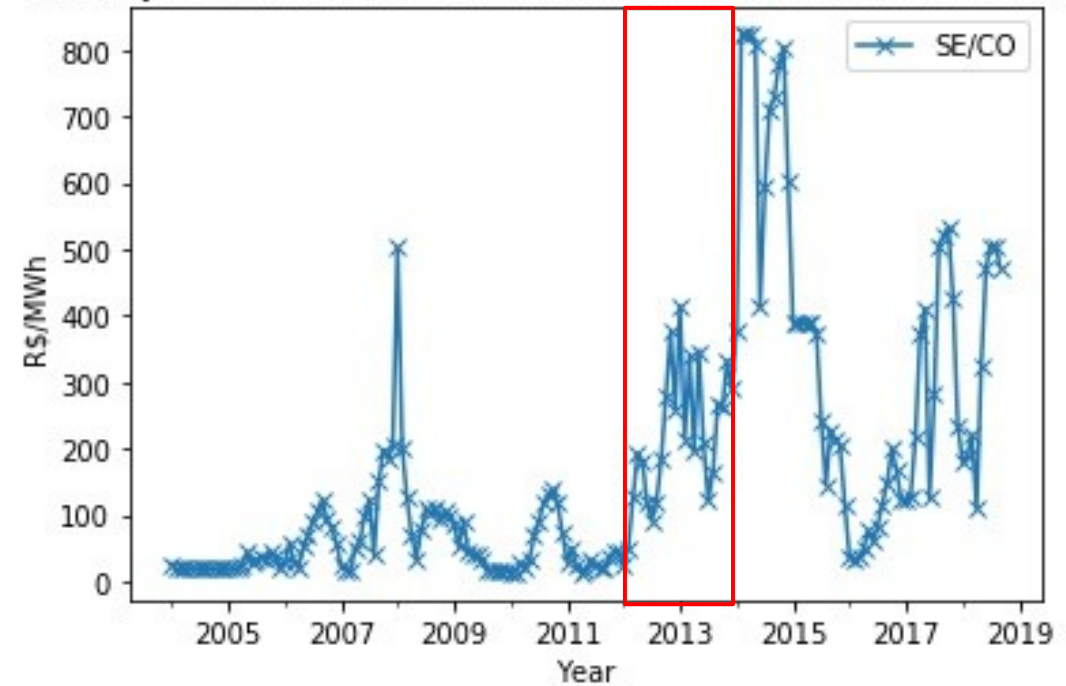
# Séries Temporaires

## ► PLD Mensal

Monthly Settlement Price of Differences (PLD) between 2012 - 2013



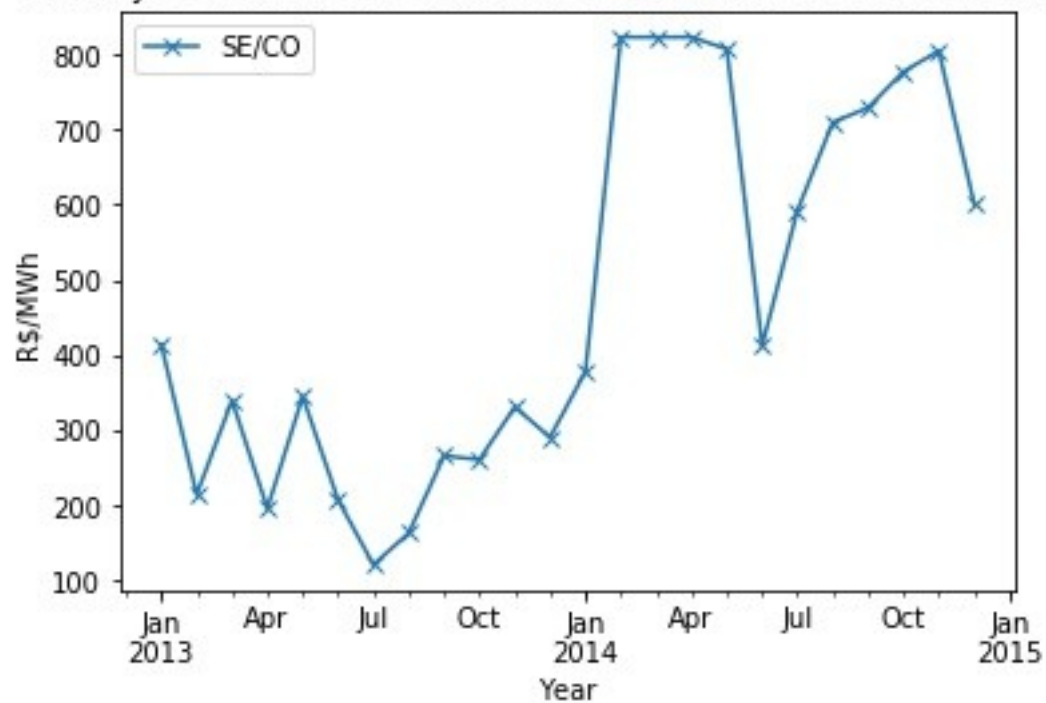
Monthly Settlement Price of Differences (PLD) between 2004 - 2018



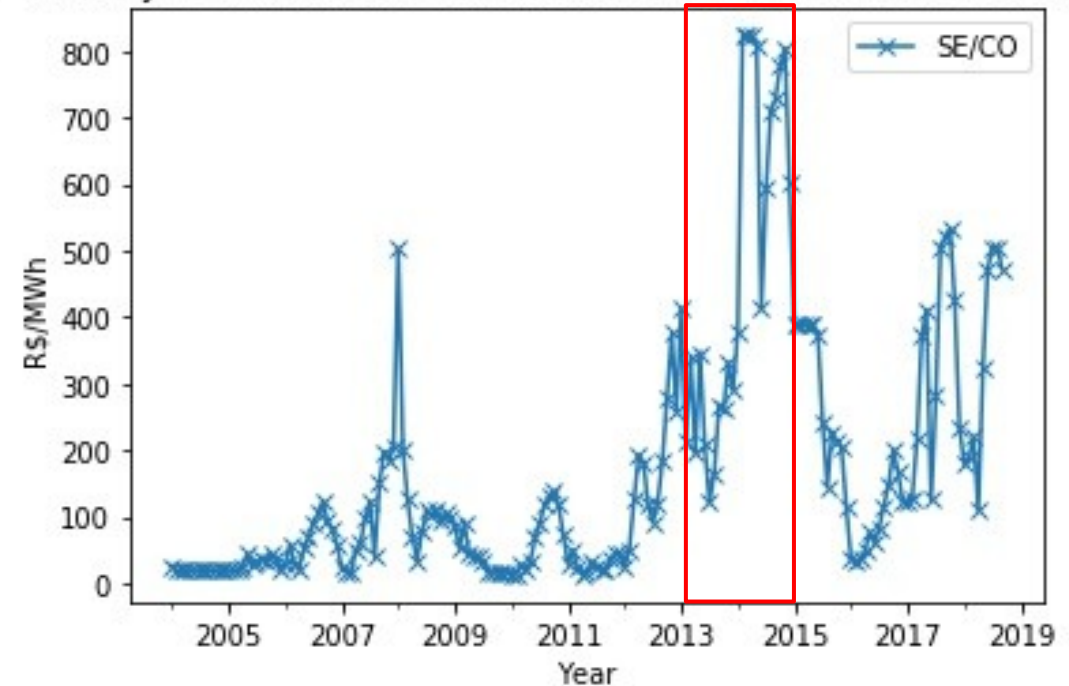
# Séries Temporaires

## ► PLD Mensal

Monthly Settlement Price of Differences (PLD) between 2013 - 2014



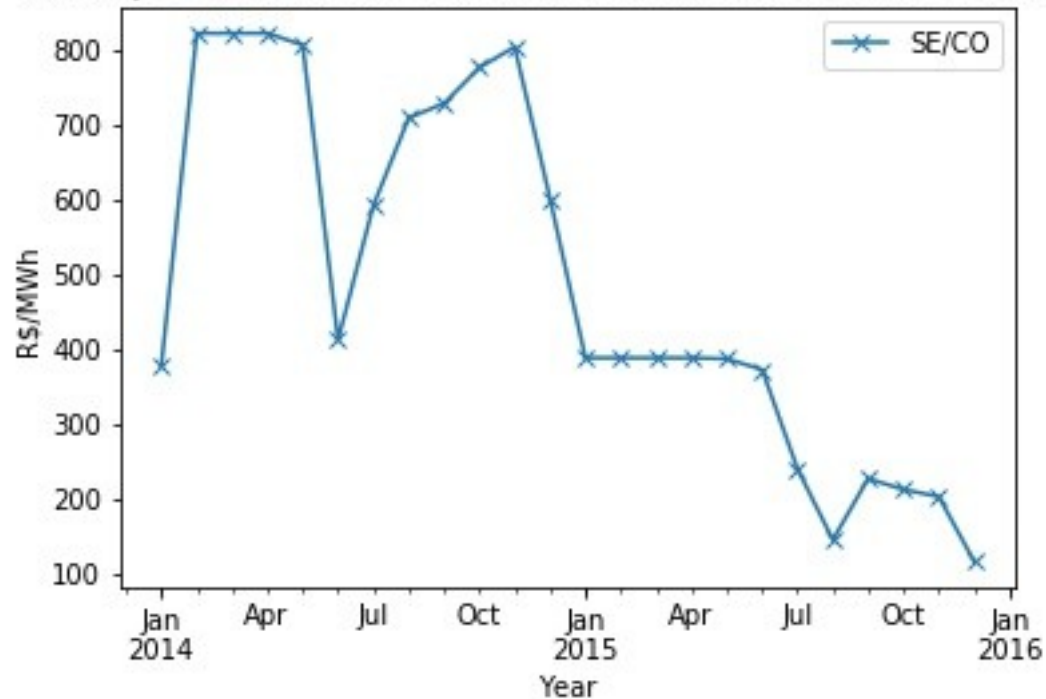
Monthly Settlement Price of Differences (PLD) between 2004 - 2018



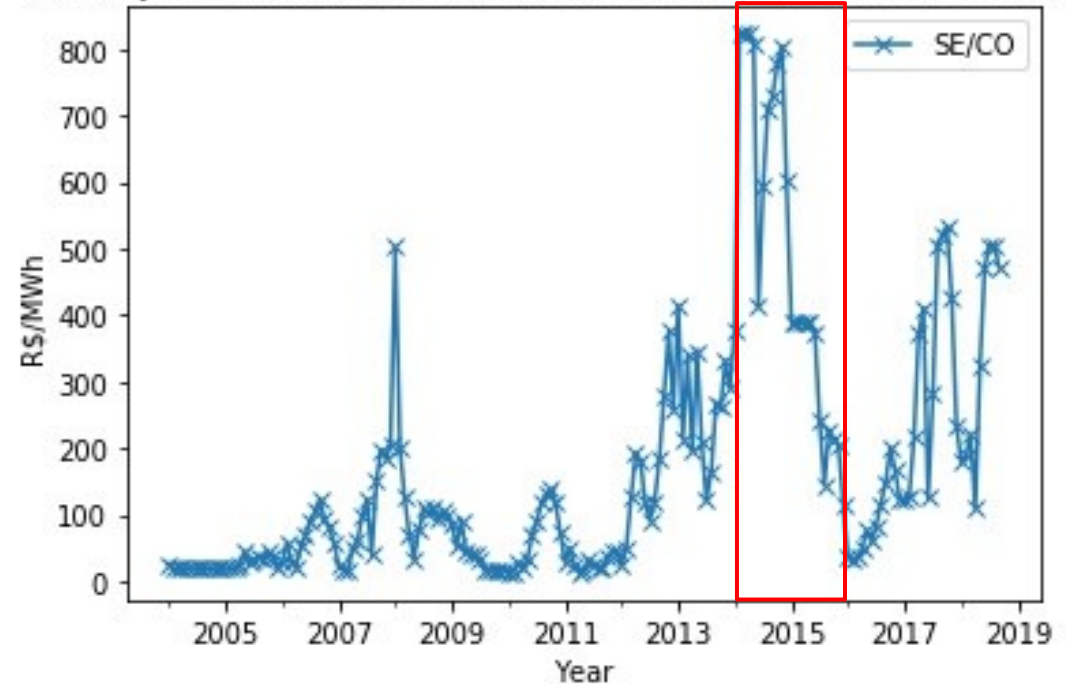
# Séries Temporaires

## ► PLD Mensal

Monthly Settlement Price of Differences (PLD) between 2014 - 2015



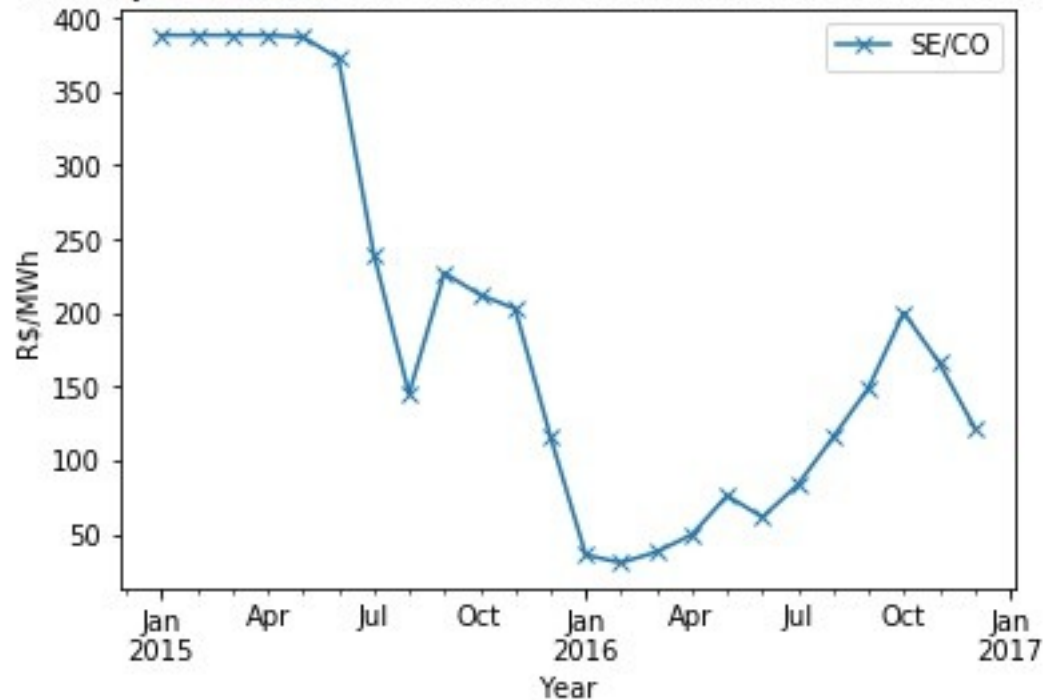
Monthly Settlement Price of Differences (PLD) between 2004 - 2018



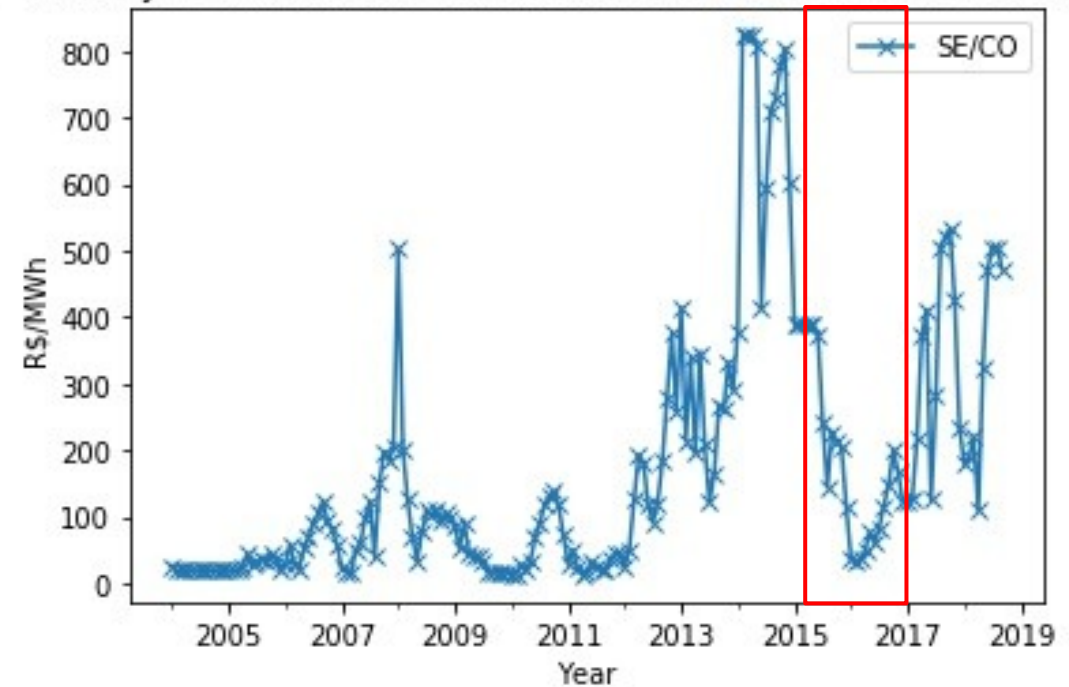
# Séries Temporaires

## ► PLD Mensal

Monthly Settlement Price of Differences (PLD) between 2015 - 2016



Monthly Settlement Price of Differences (PLD) between 2004 - 2018

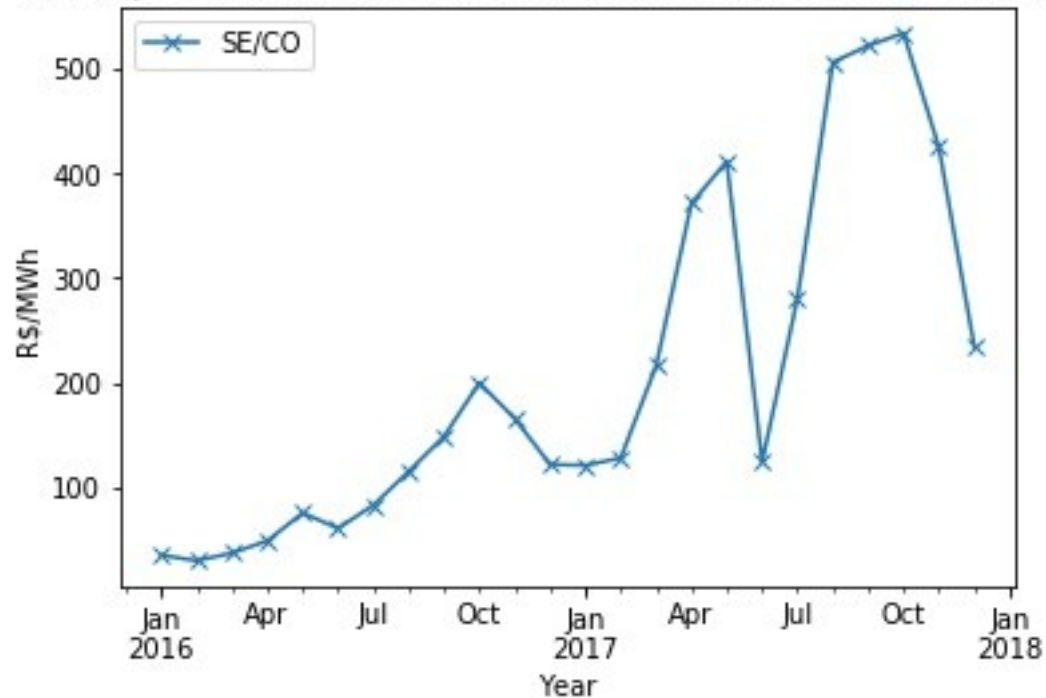




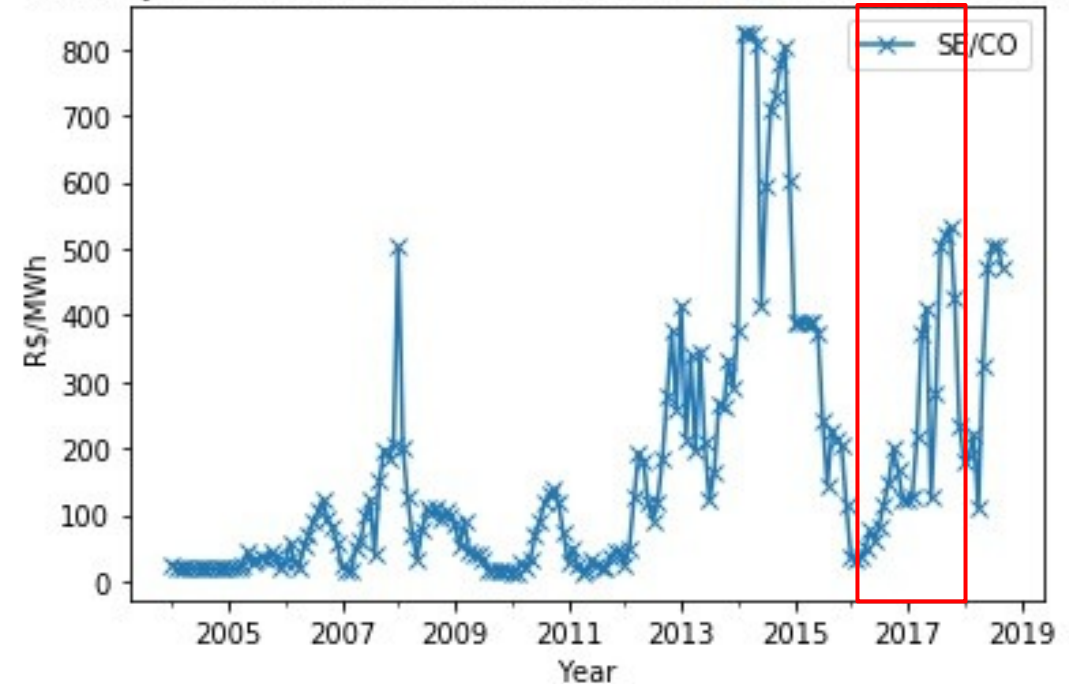
# Séries Temporais

## ► PLD Mensal

Monthly Settlement Price of Differences (PLD) between 2016 - 2017



Monthly Settlement Price of Differences (PLD) between 2004 - 2018

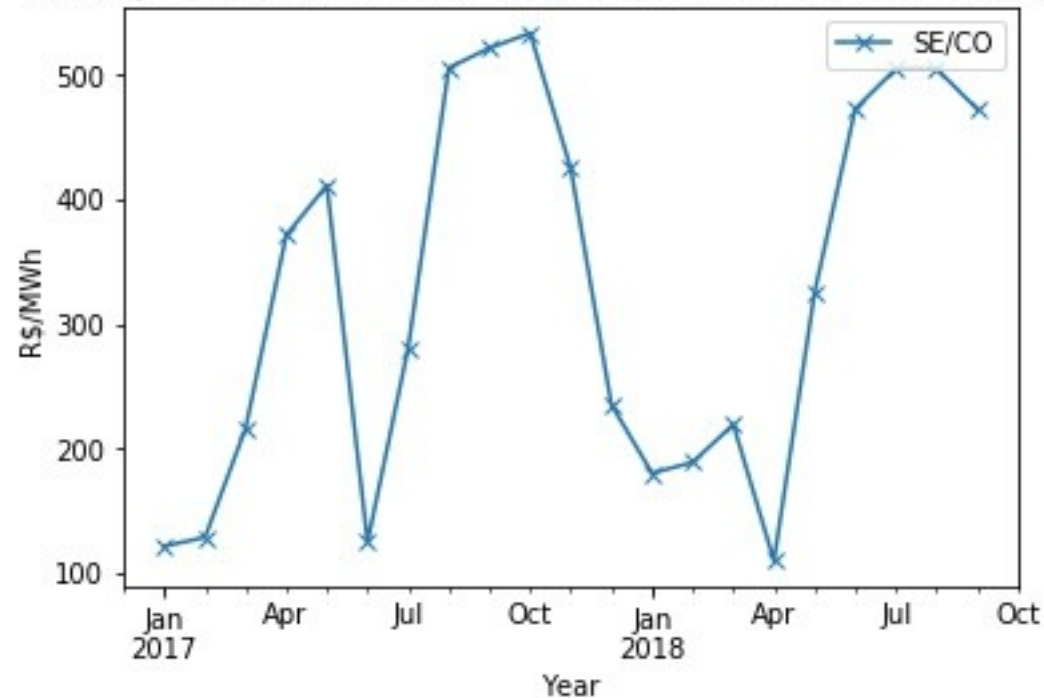




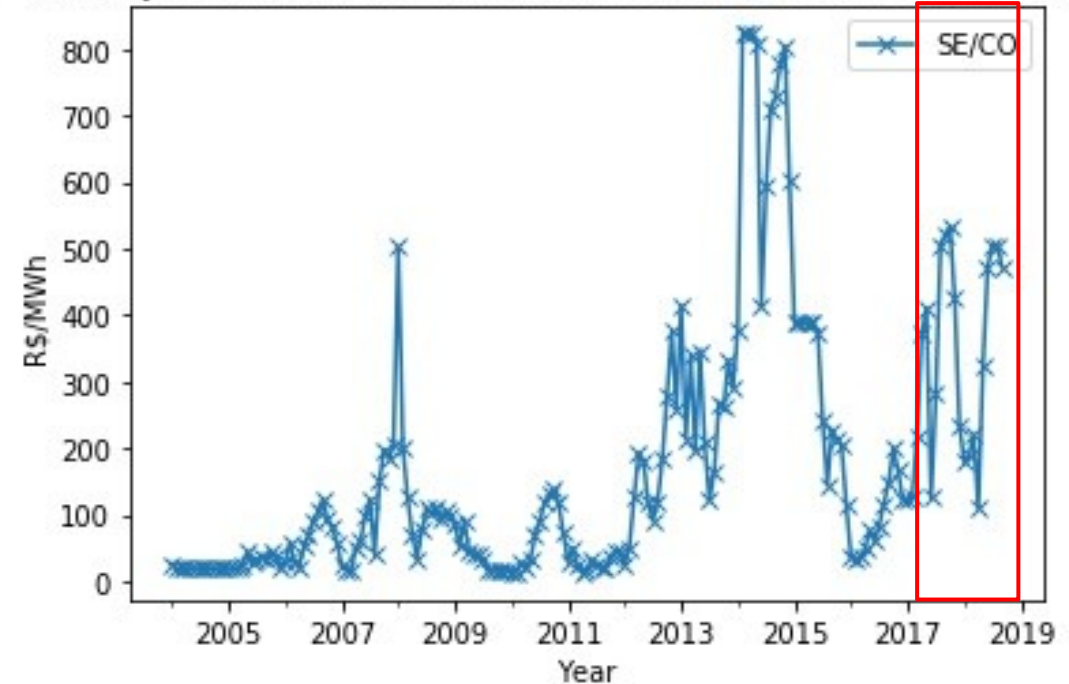
# Séries Temporais

## ► PLD Mensal

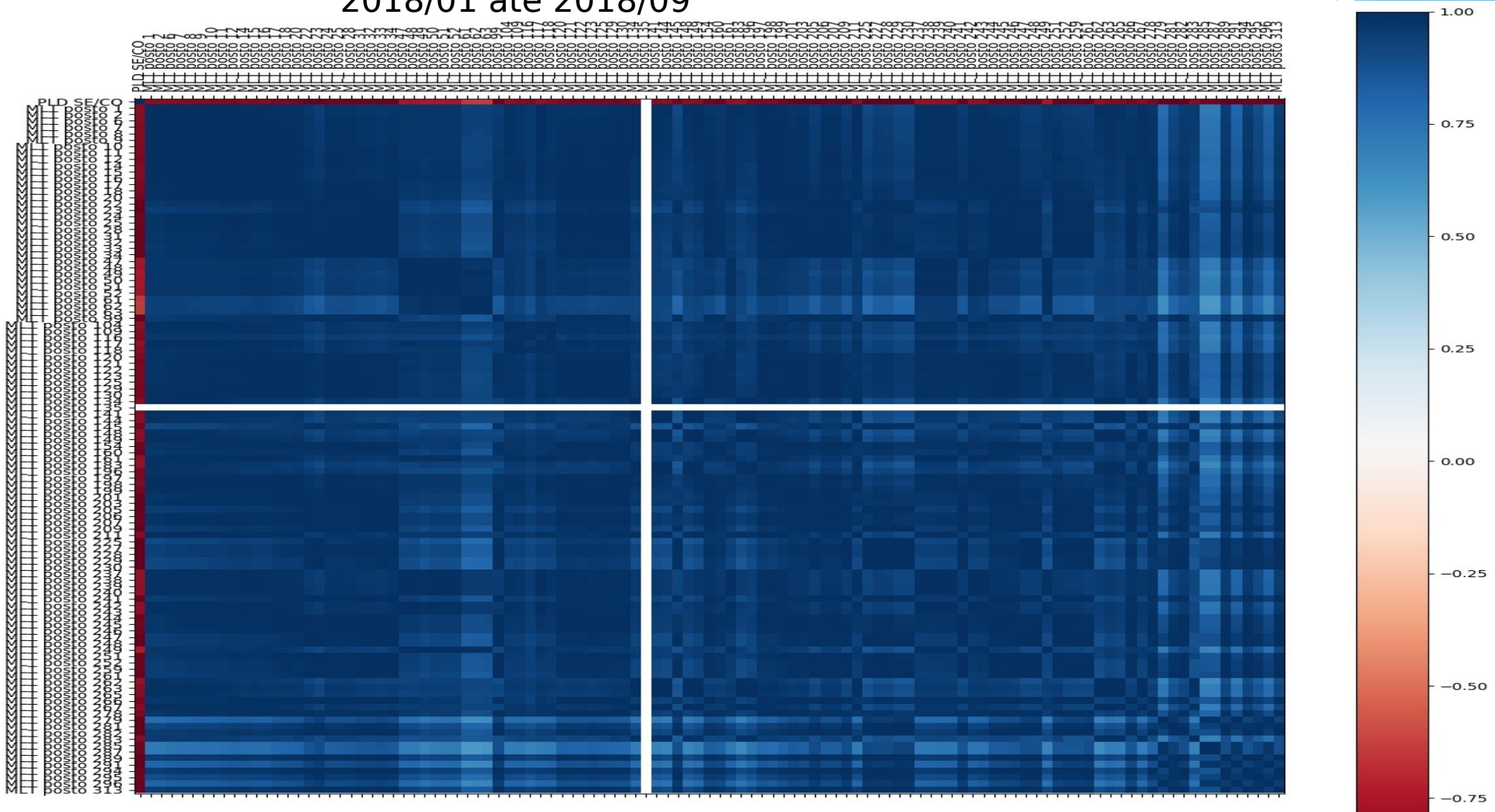
Monthly Settlement Price of Differences (PLD) between 2017 - 2018



Monthly Settlement Price of Differences (PLD) between 2004 - 2018

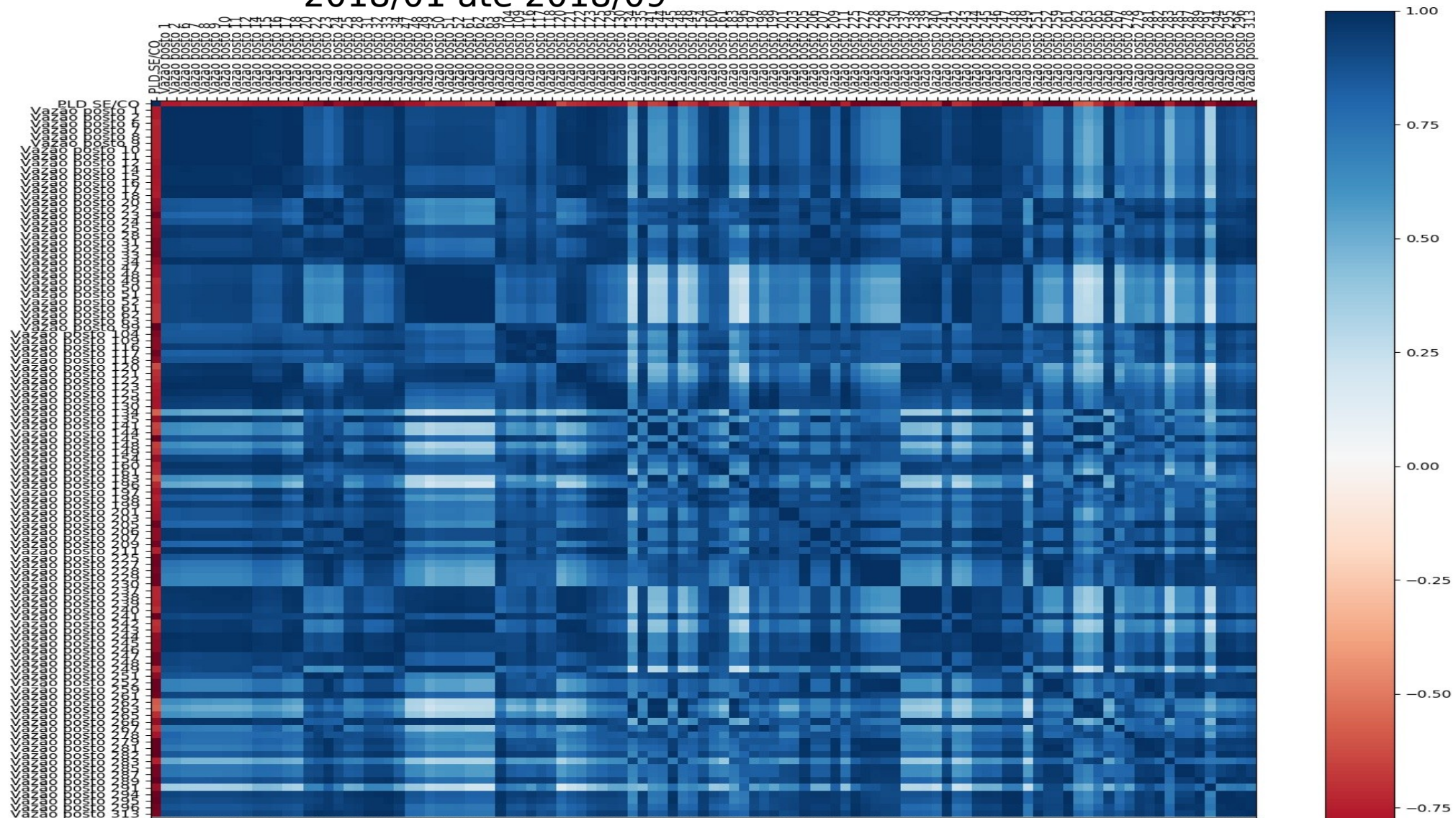


Correlação entre o PLD e o MLT para  
cada posto da região SE/CO entre  
2018/01 até 2018/09





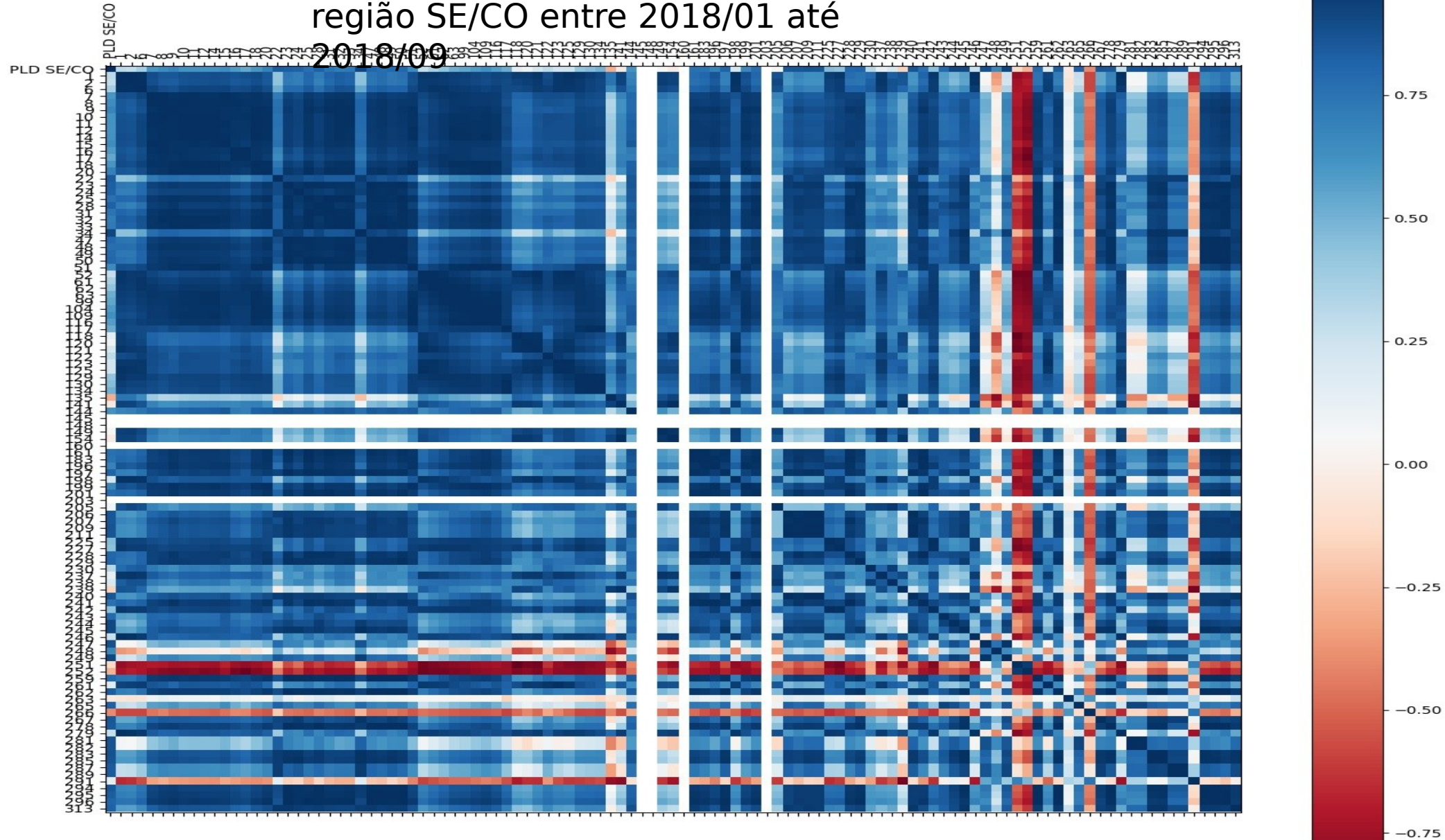
# Correlação entre o PLD e as vazões para os postos da região SE/CO entre 2018/01 até 2018/09





Correlação entre o PLD e a evaporação  
para usina presente em cada posto da  
região SE/CO entre 2018/01 até

2018/09

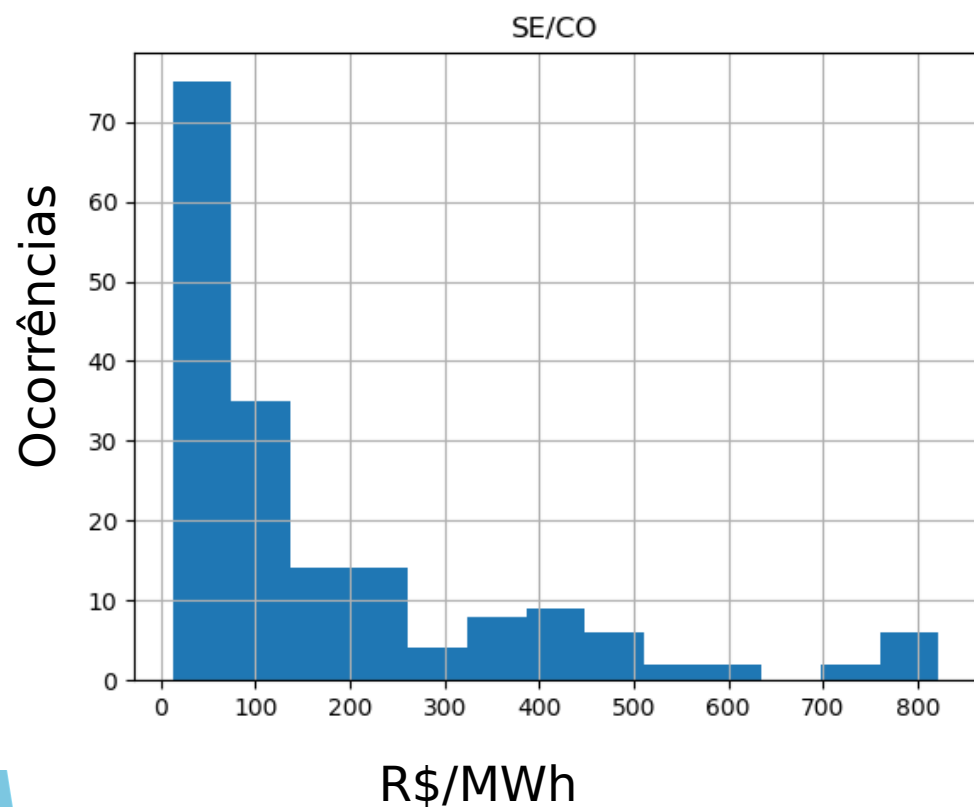


# Considerações sobre as matrizes de correlação

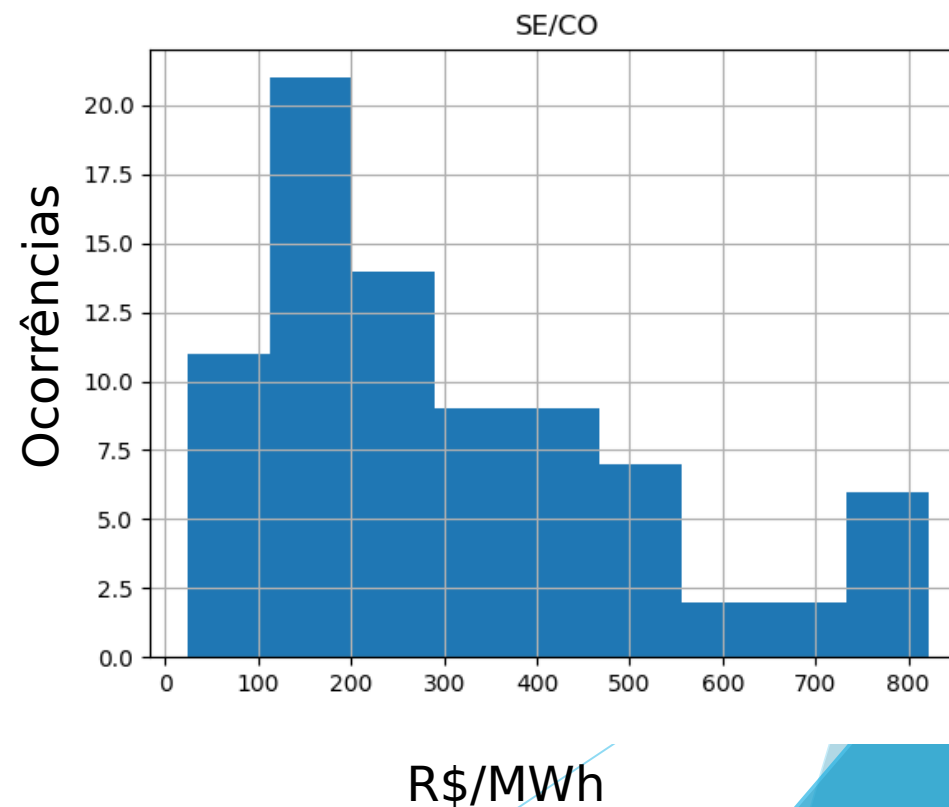
- ▶ PLD x MLT: Alta correlação negativa (Observado na primeira linha/coluna da matriz)
  - ▶ menos energia natural armazenada -> maior utilização de termelétricas
- ▶ PLD X Vazão: Alta correlação negativa (Observado na primeira linha/coluna da matriz)
  - ▶ Idem caso acima
- ▶ Não há uma correlação alta entre o coeficiente de evaporação da usina e a PLD
- ▶ As vazões dos postos tem alta correlação
  - ▶ Dado que todos eles pertencem à mesma região, é um resultado esperado

# Histograma

## ► PLD Mensal (2004-2018)



## ► PLD Mensal (2012-2018)



# Trabalhos Futuros

- ▶ **Decompor a PLD em séries temporais**
- ▶ **Conseguir licença de estudante para o NEWAVE e o DECOMP**

# Bibliografia

1. Dados de entrada do DECOMP (CCEE) :  
[http://www.ccee.org.br/portal/faces/acesso\\_rapido\\_header\\_publico\\_na\\_o\\_logado/biblioteca\\_virtual?palavrachave=Conjunto%20de%20arquivos%20para%20c%C3%A1culo](http://www.ccee.org.br/portal/faces/acesso_rapido_header_publico_na_o_logado/biblioteca_virtual?palavrachave=Conjunto%20de%20arquivos%20para%20c%C3%A1culo)
2. Manual do usuário DECOMP:  
<http://www2.aneel.gov.br/aplicacoes/audiencia/arquivo/2013/086/documento/manualusuariodecompv18.3.pdf>
3. Manual de referência do DECOMP:  
<http://www.cepel.br/lumis/portal/file/fileDownload.jsp?fileId=21CF889063FD0A7B0164D142898C1C22>