Aula 5: Algoritmos

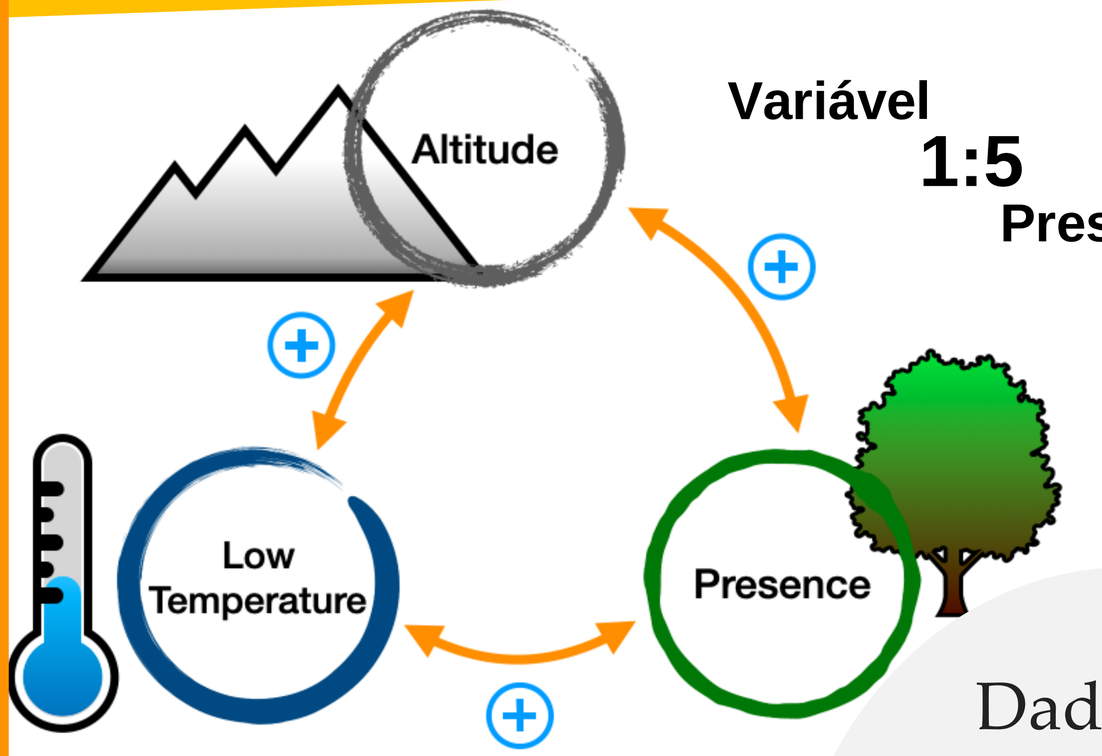
Luíz Fernando Esser

Fundamentos de Modelagem de Distribuição de Espécies no R

Na última aula...

- ✓ Correlação
- ✓ Causalidade
- ✓ Variáveis de Confusão
- ✓ Multicolinearidade
- ✓ VIF
- ✓ Quantas variáveis usar
- ✓ Variáveis Categóricas

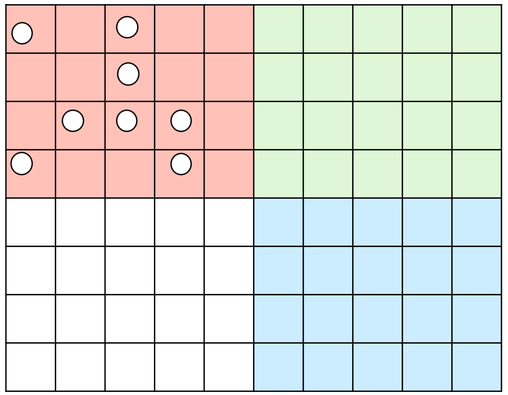
Garbage in, garbage out.



Variável

1:5

Presenças



Dados Geográficos

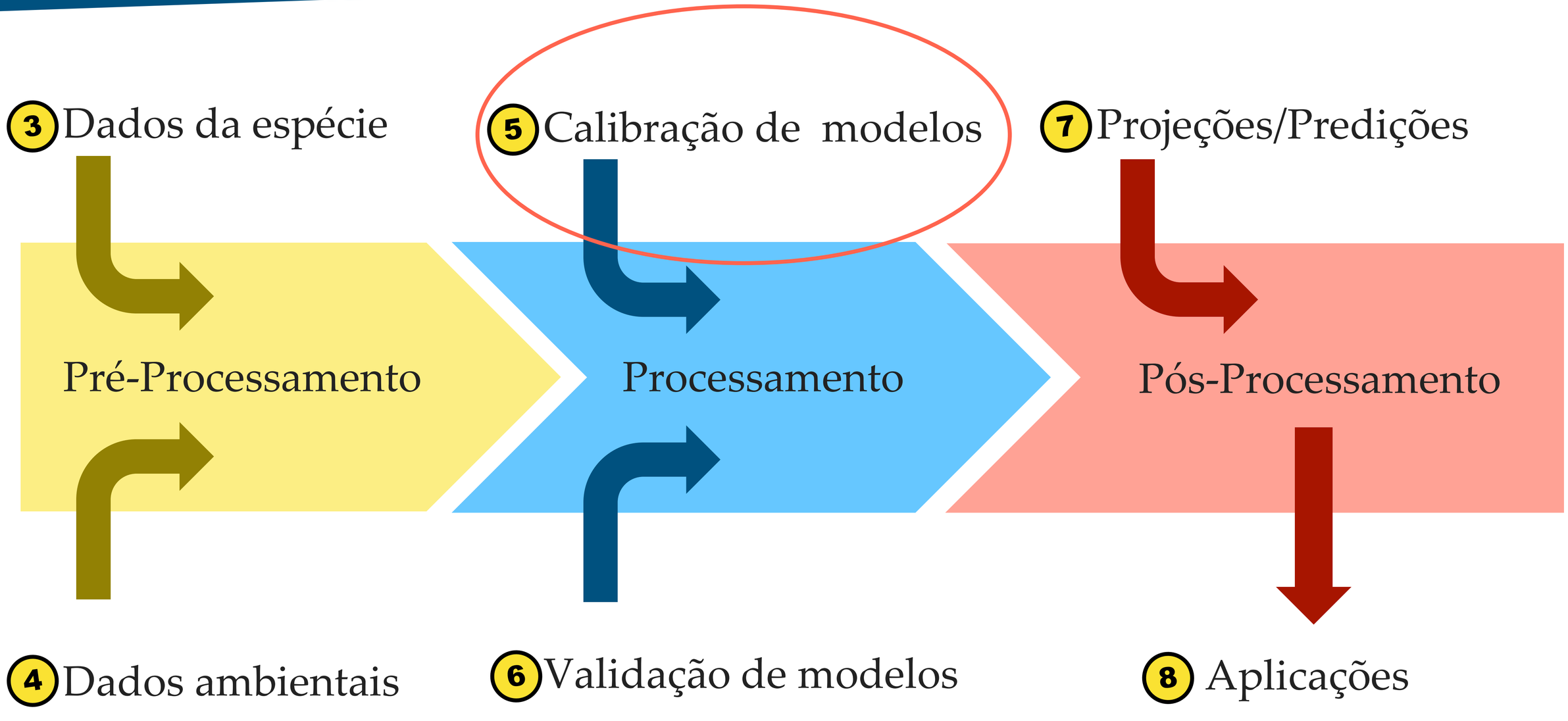
Informação Ambiental

O que vamos fazer hoje?

Teórica (13:30 ~ 15:10):

- ❑ Envelopes
- ❑ Regressões
- ❑ Redes Neurais (Neural Networks)
- ❑ Support Vector Machines (SVM)
- ❑ Classification and Regression Trees
- ❑ Discriminantes
- ❑ Parametrização de algoritmos

Framework - SDM

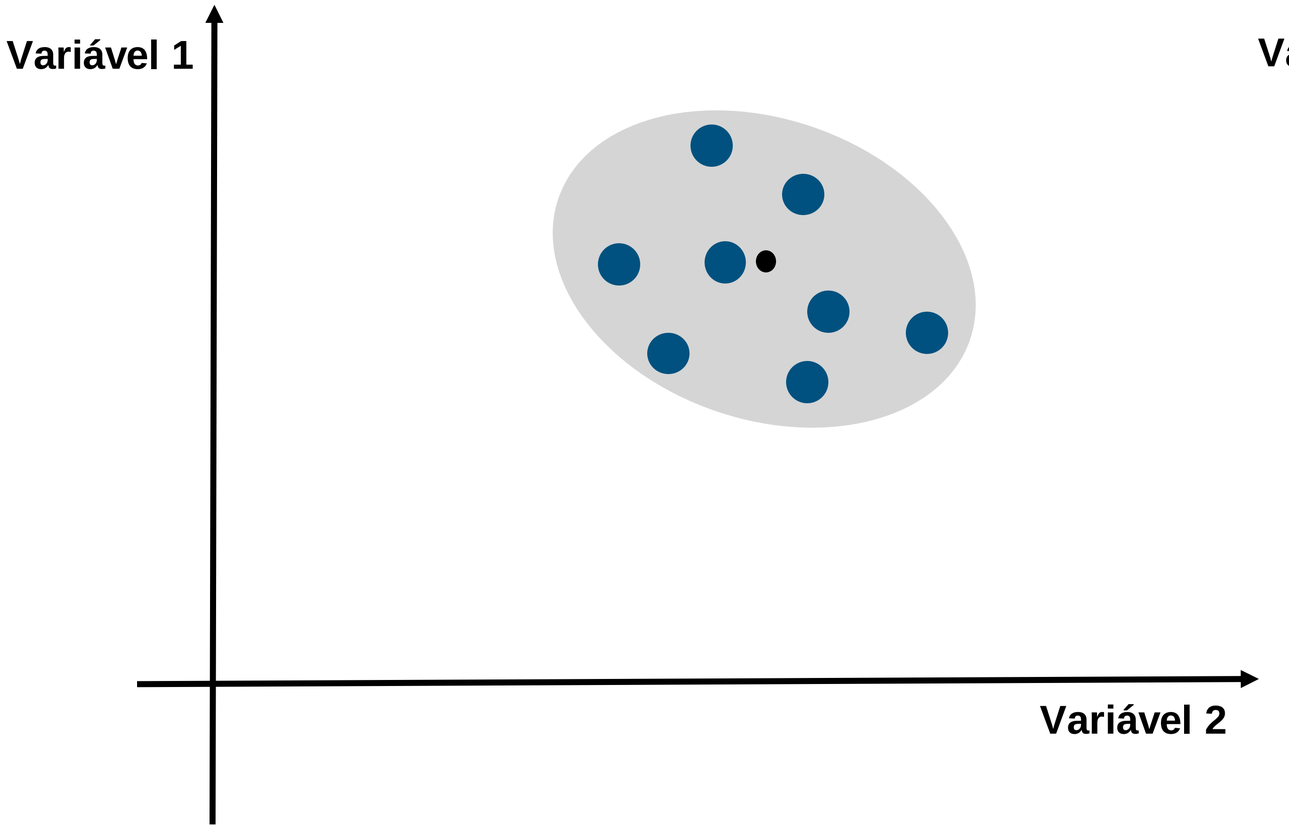


Somente Presença
Presence-only

Presence-only

Distâncias

mahal.dismo



Envelopes (SRE)

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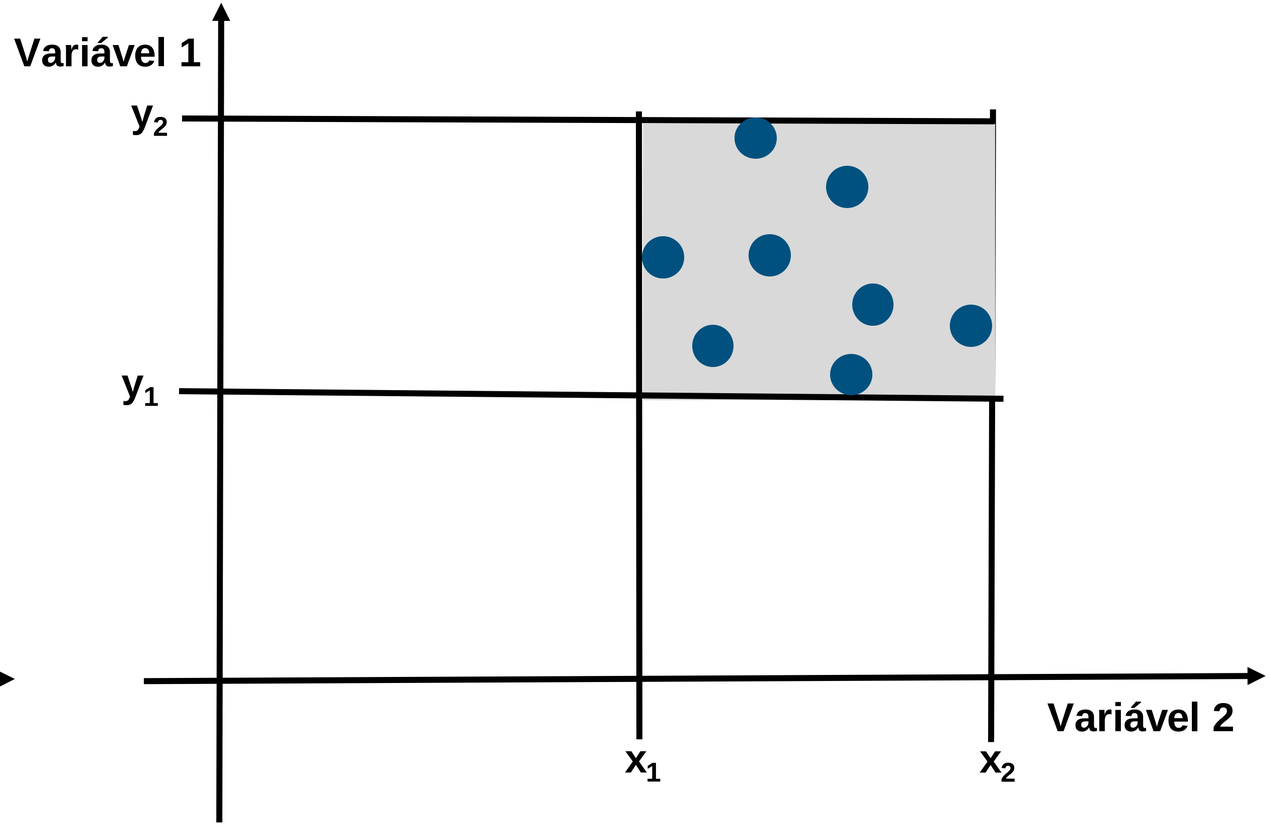
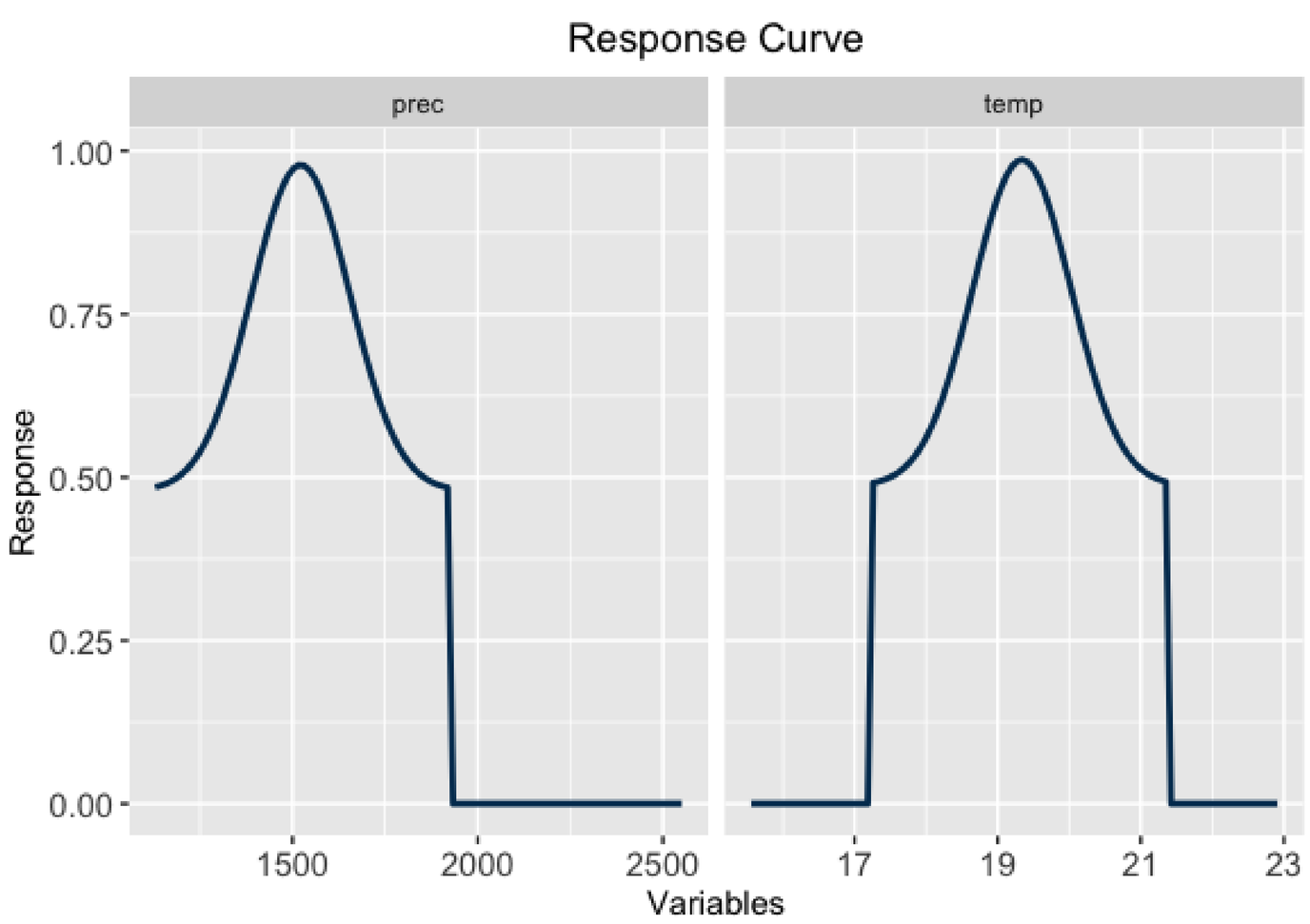
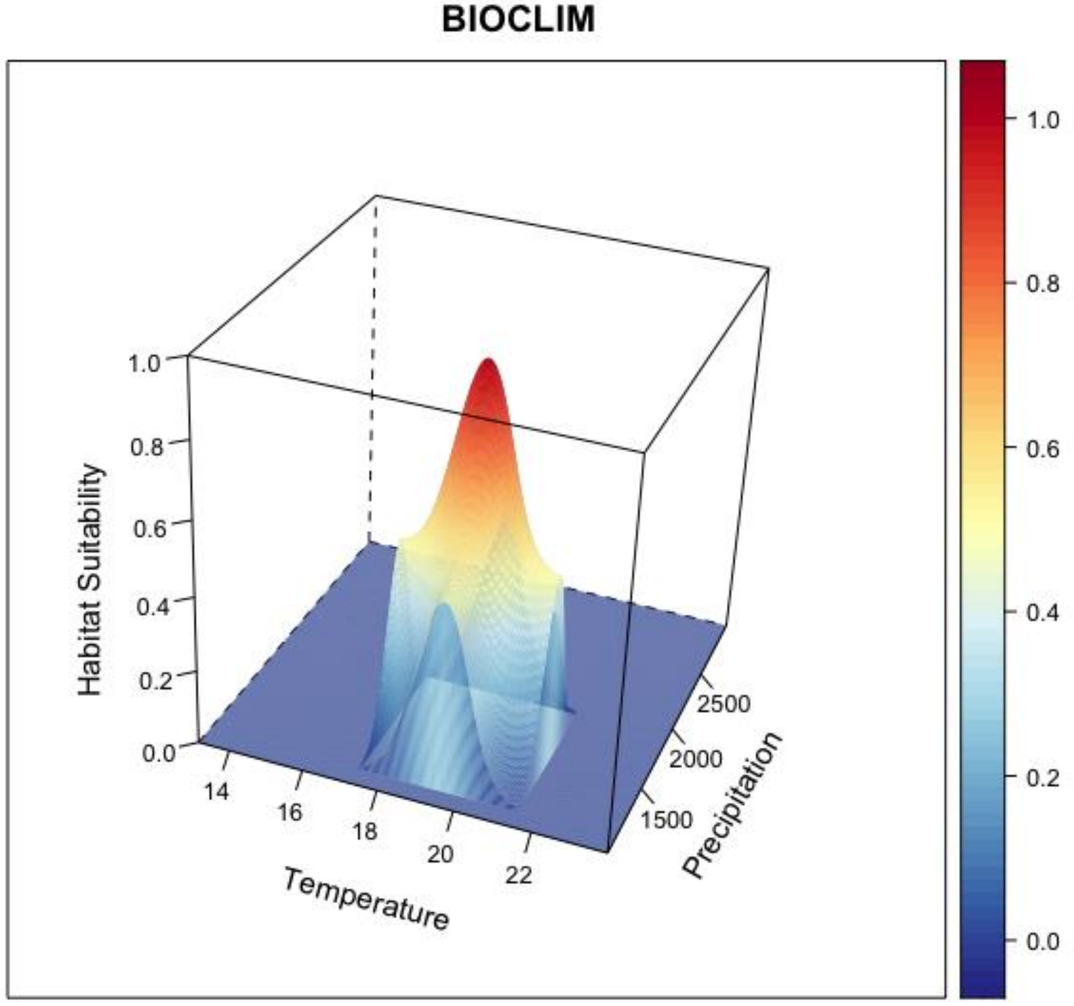


Presence-only

Envelopes (SRE): BIOCLIM



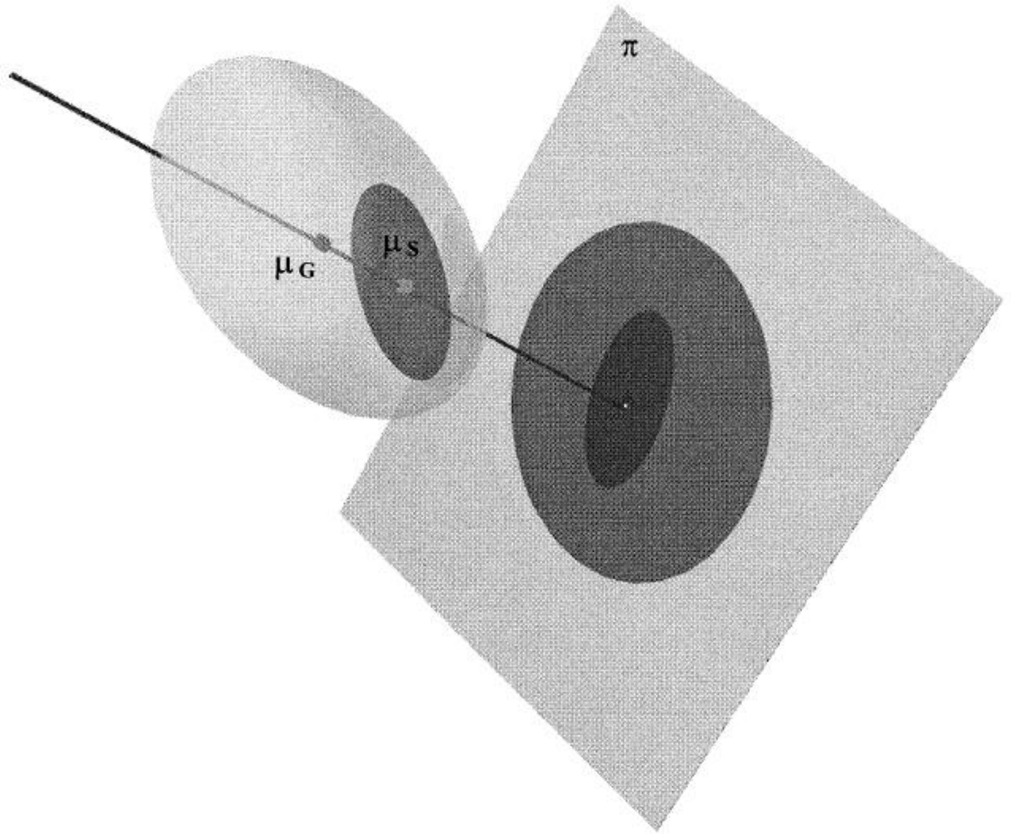


Presença e Background
Presence-Background

Presence-Background

ENFA

Ecological Niche Factor Analysis

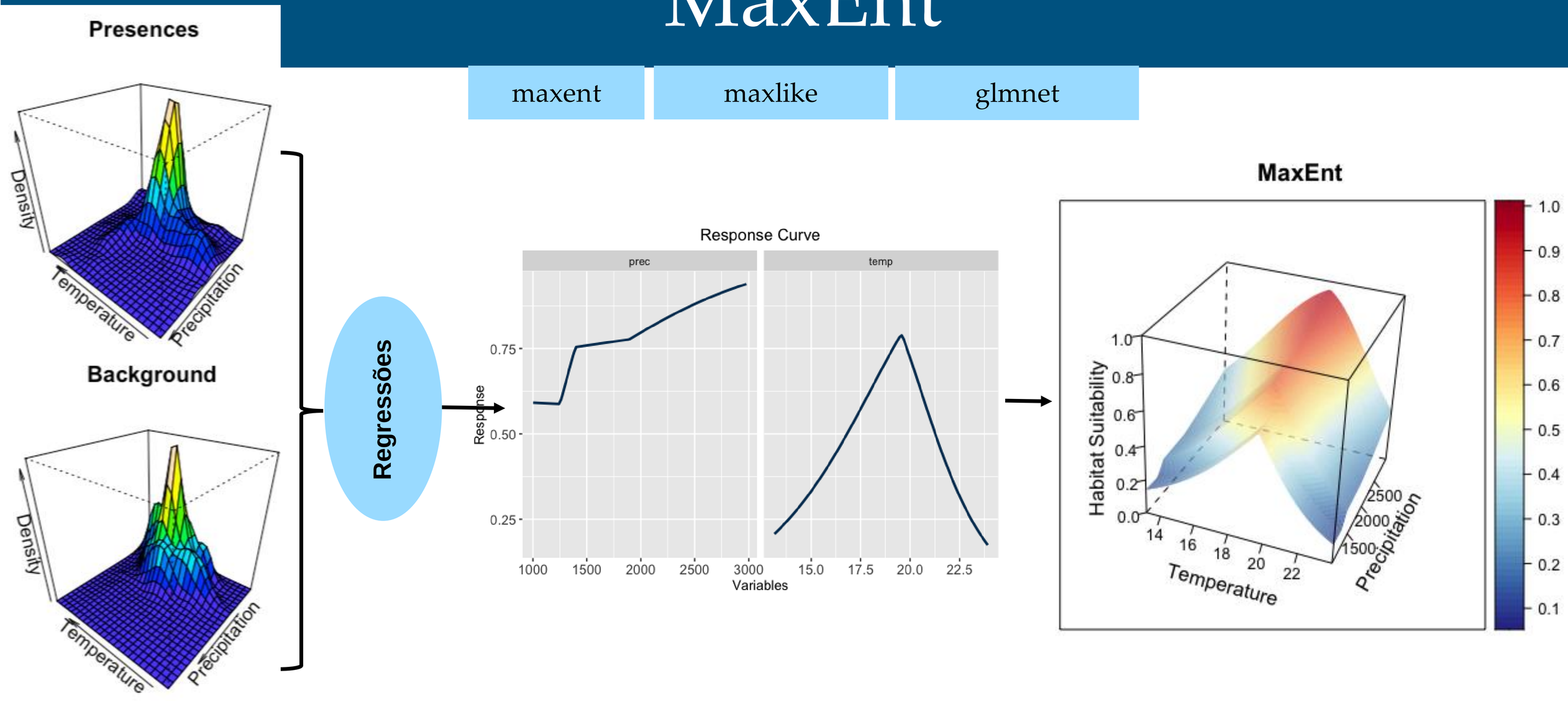


Hirzel, A.H., Hausser, J., Chessel, D. and Perrin, N. (2002) Ecological-niche factor analysis: How to compute habitat-suitability maps without absence data? Ecology, 83, 2027–2036.

Presence-Background

MaxEnt

maxent | maxlike | glmnet

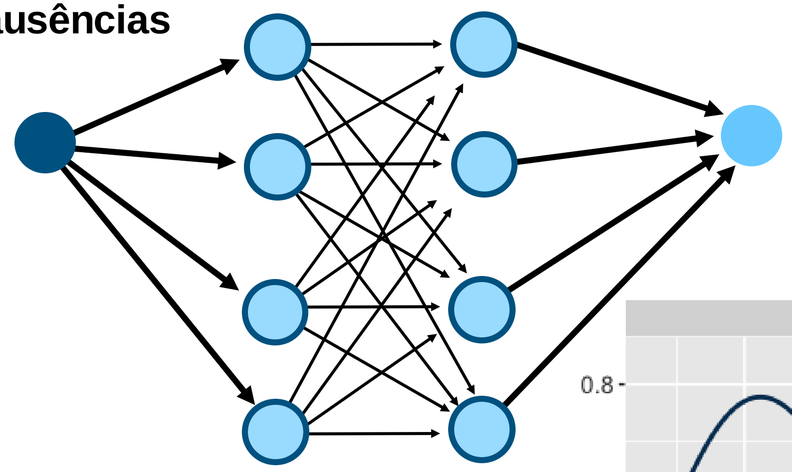


Presença e Pseudoausência
Presence-Pseudoabsence

Machine Learning

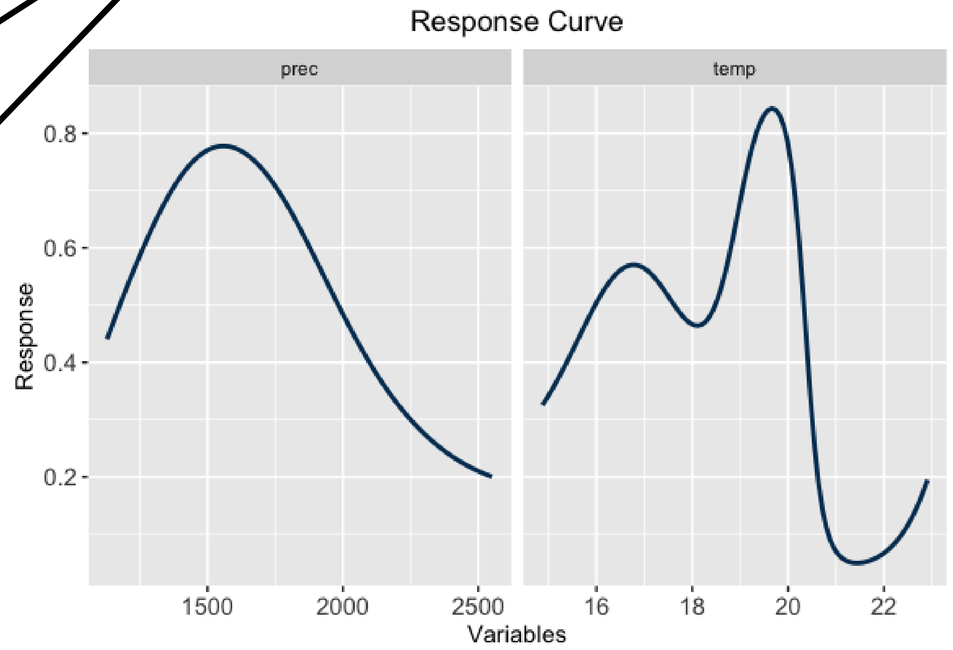
Redes Neurais

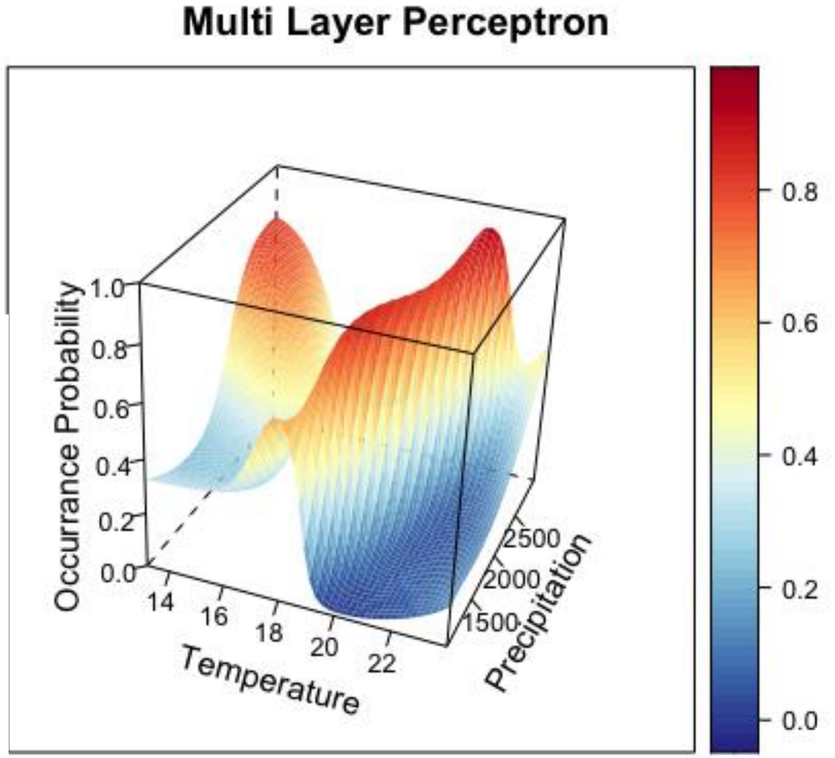
Dados ambientais para presenças e ausências



mlp | rbf

Modelo

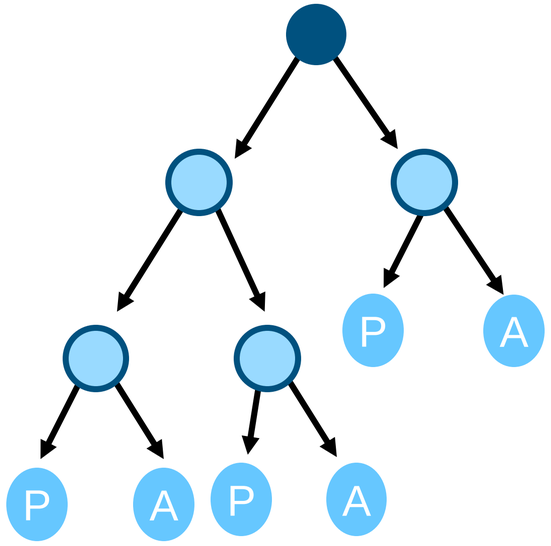


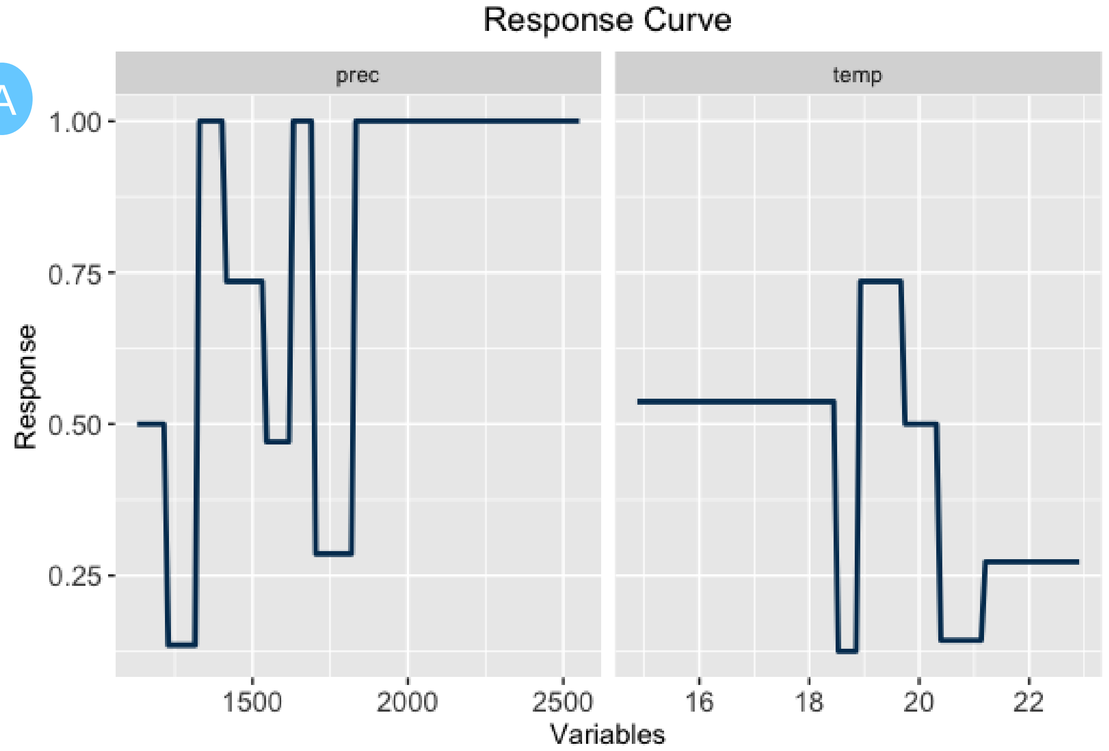


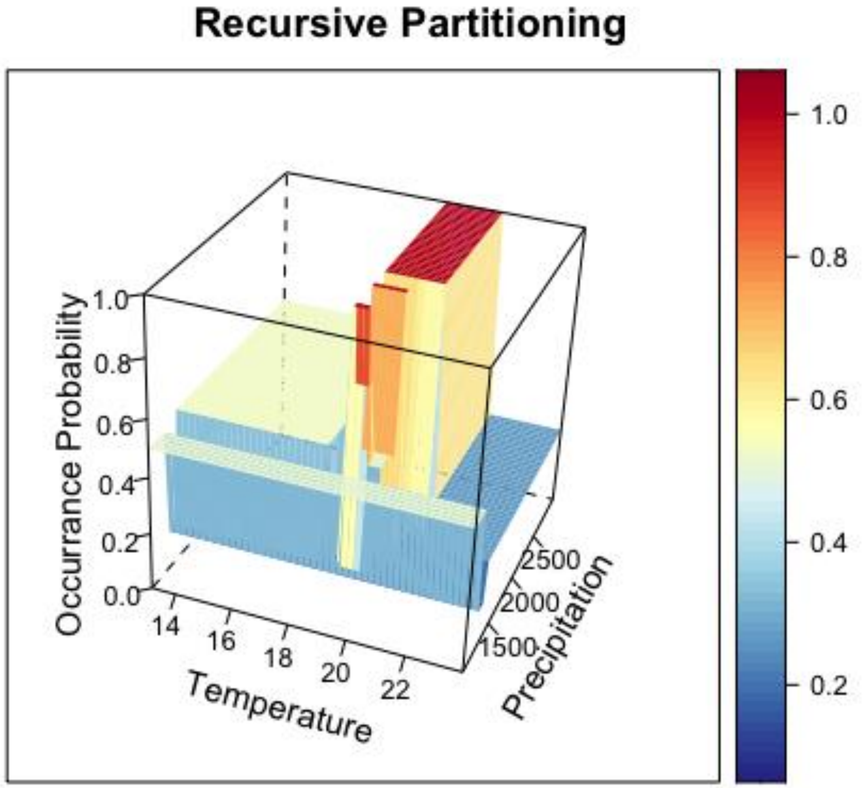
Machine Learning

Árvores

rf | rpart | brt | cart



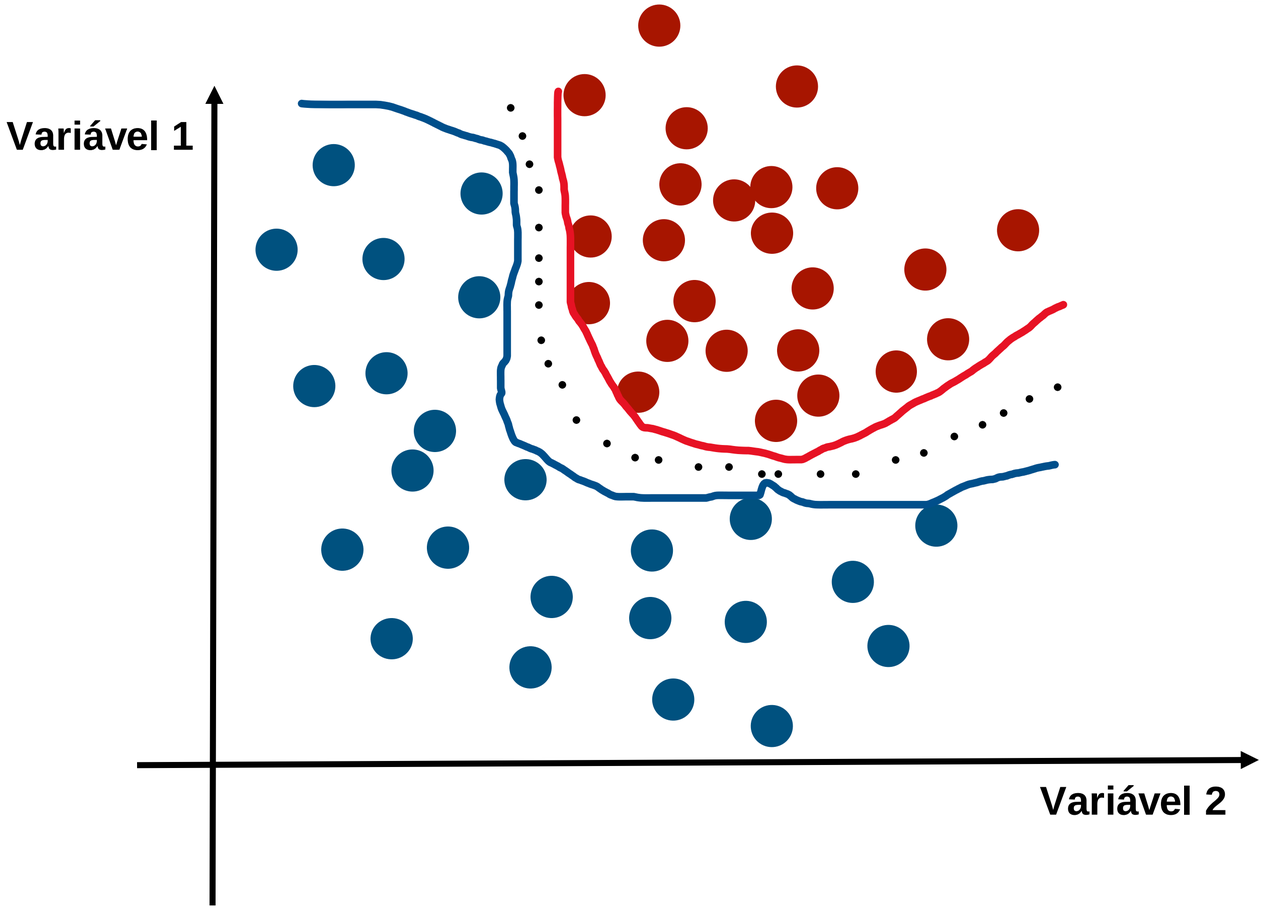


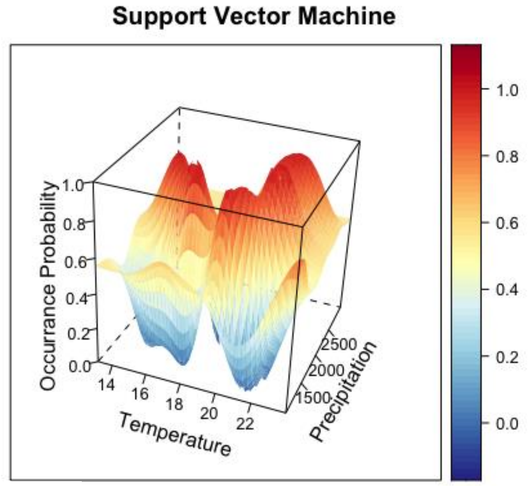


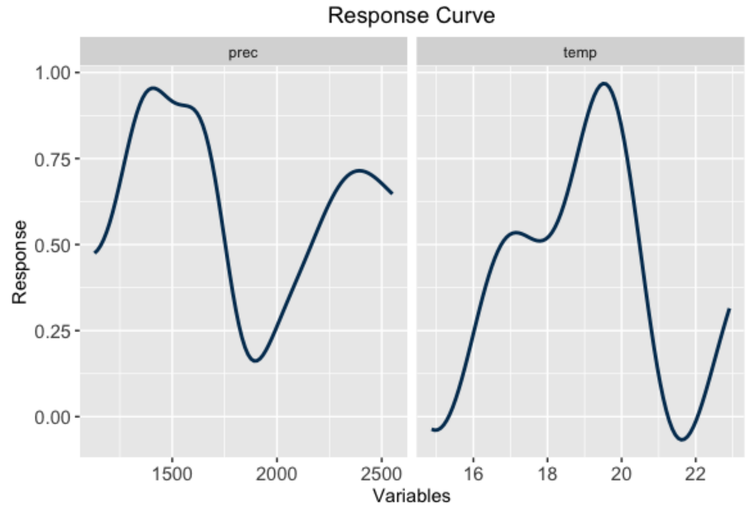
Machine Learning

Support Vector Machines

svm





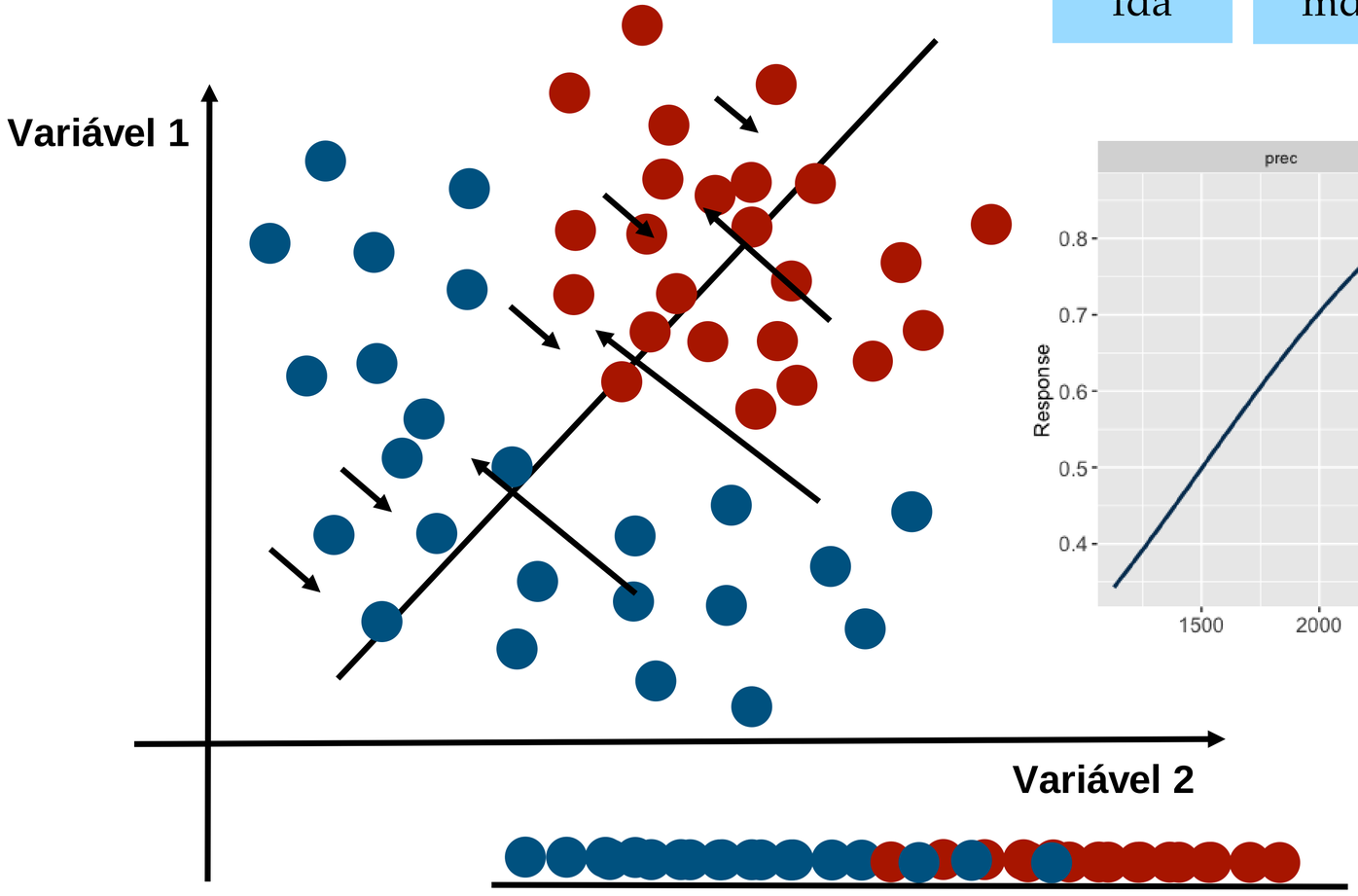


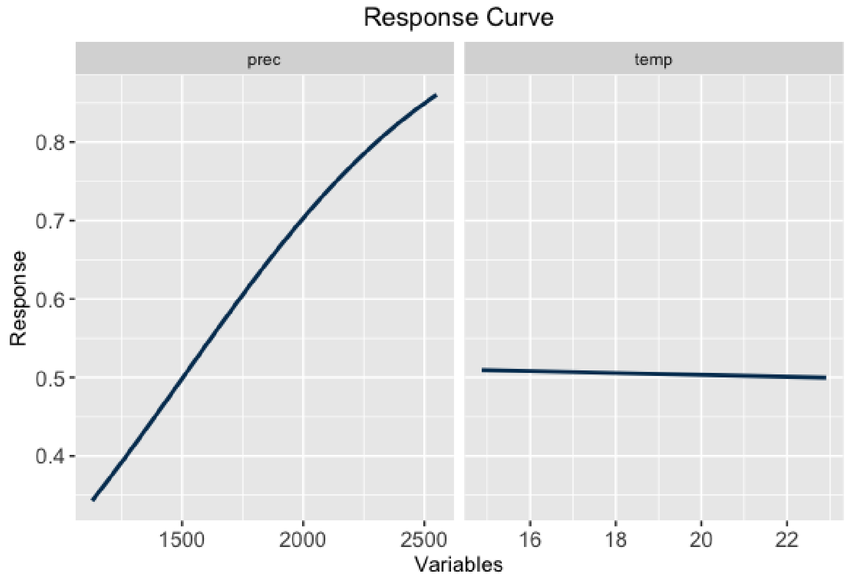
Machine Learning

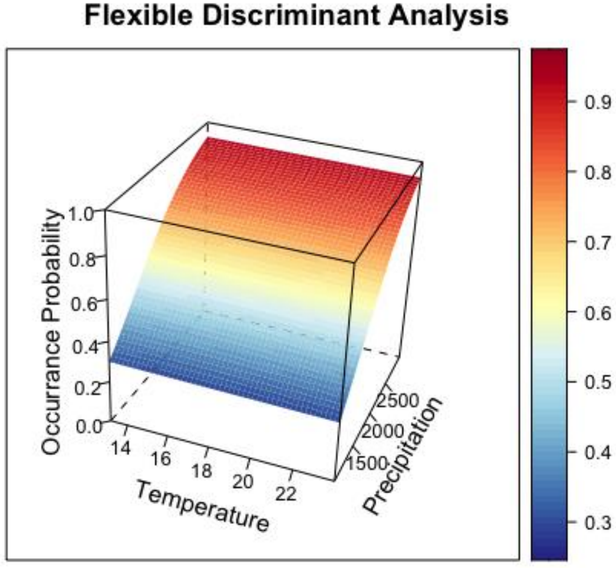
Discriminantes

fda

mda



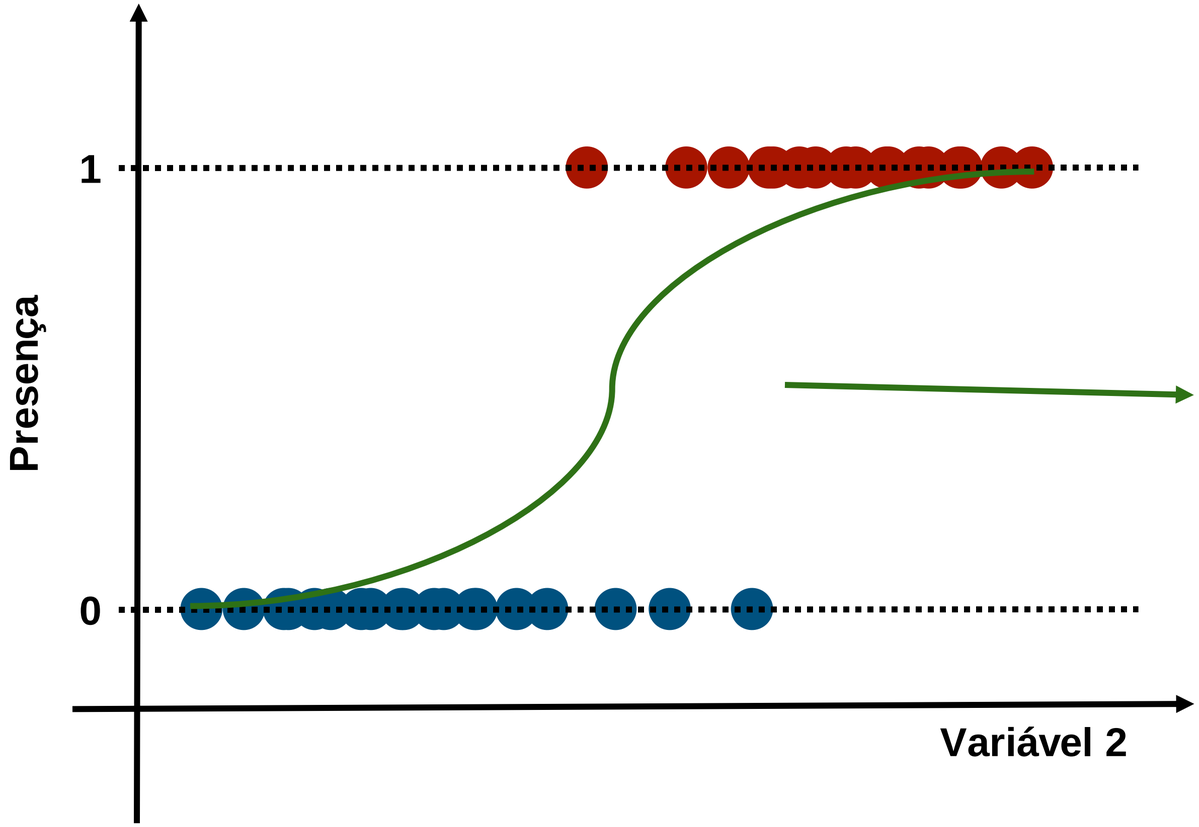


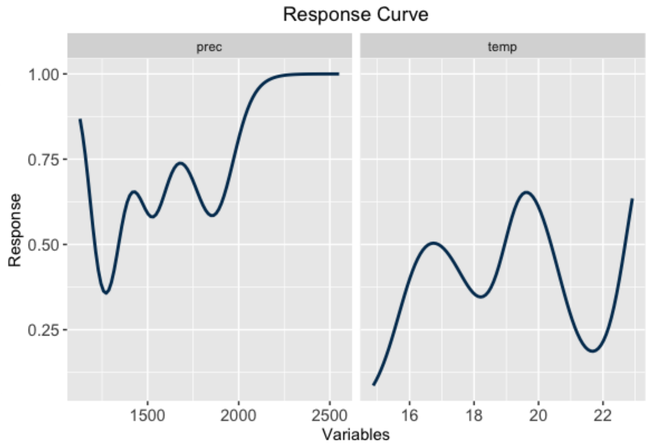


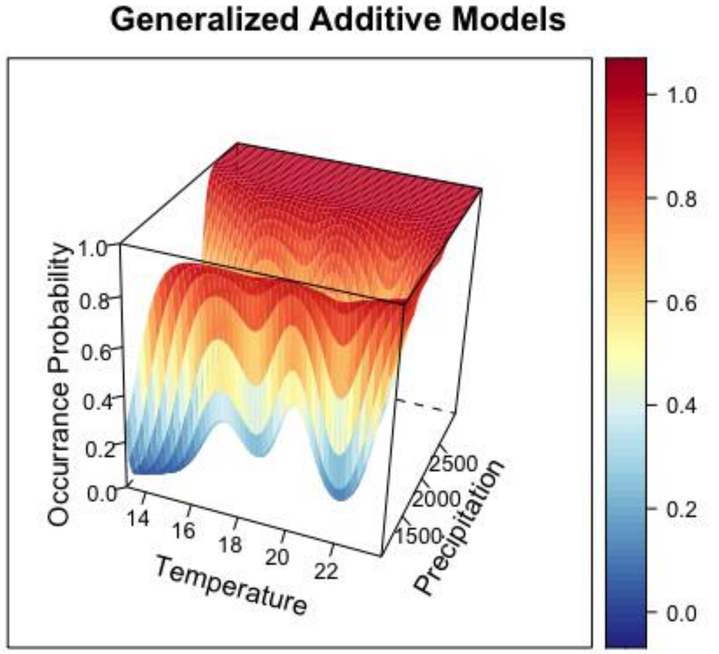
Machine Learning

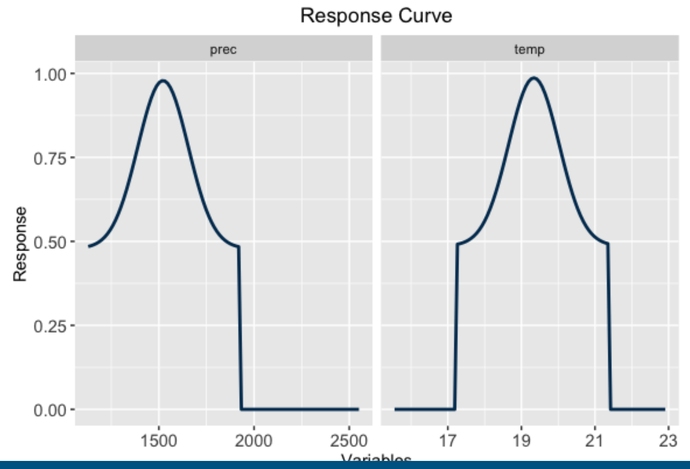
Regressões

gam	glm	mars





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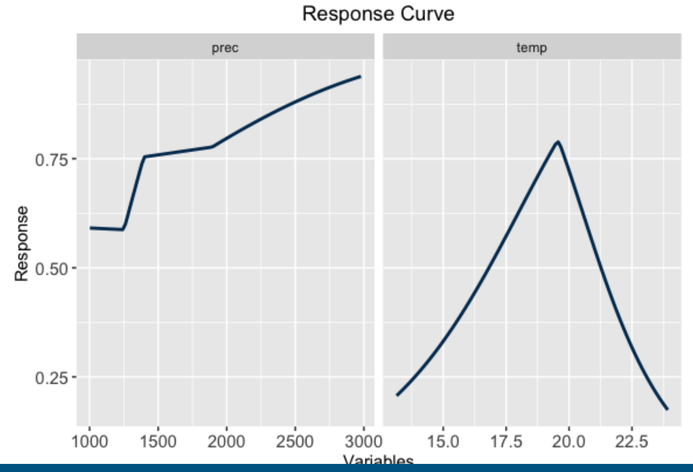
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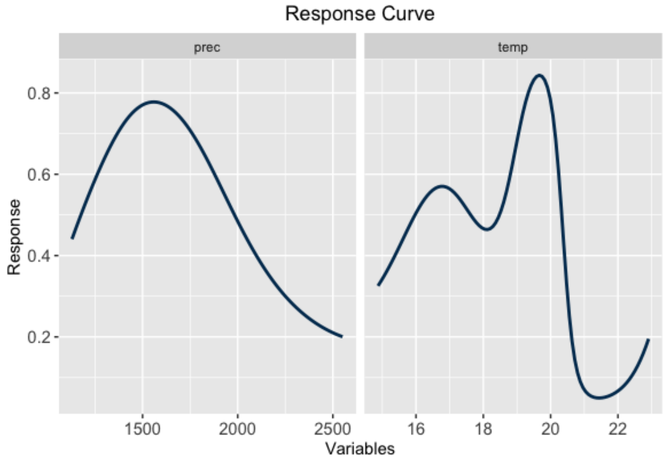
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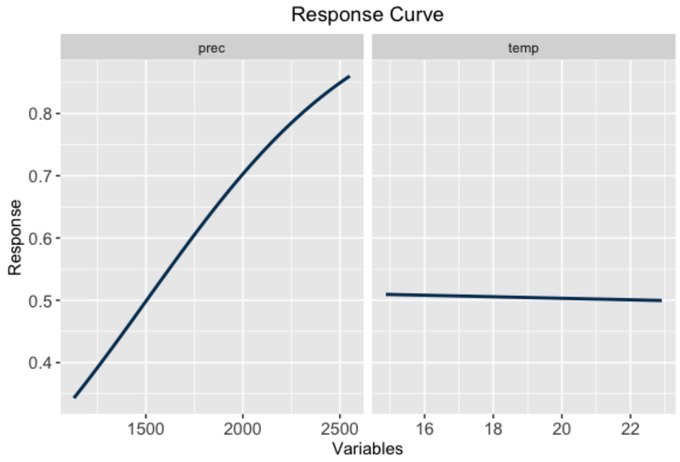
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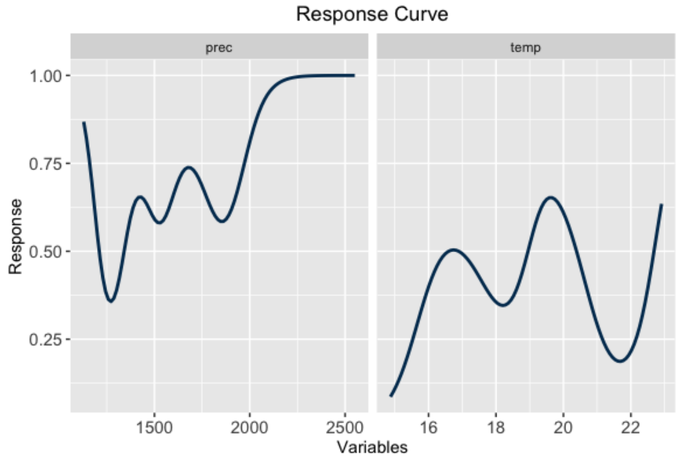
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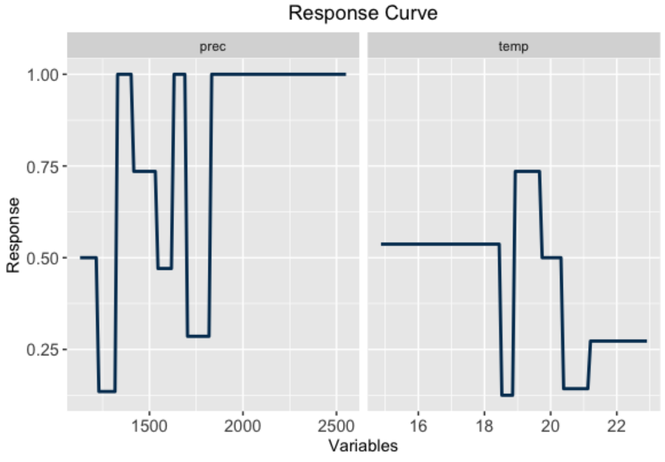
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Variables

Alinhavando...

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