

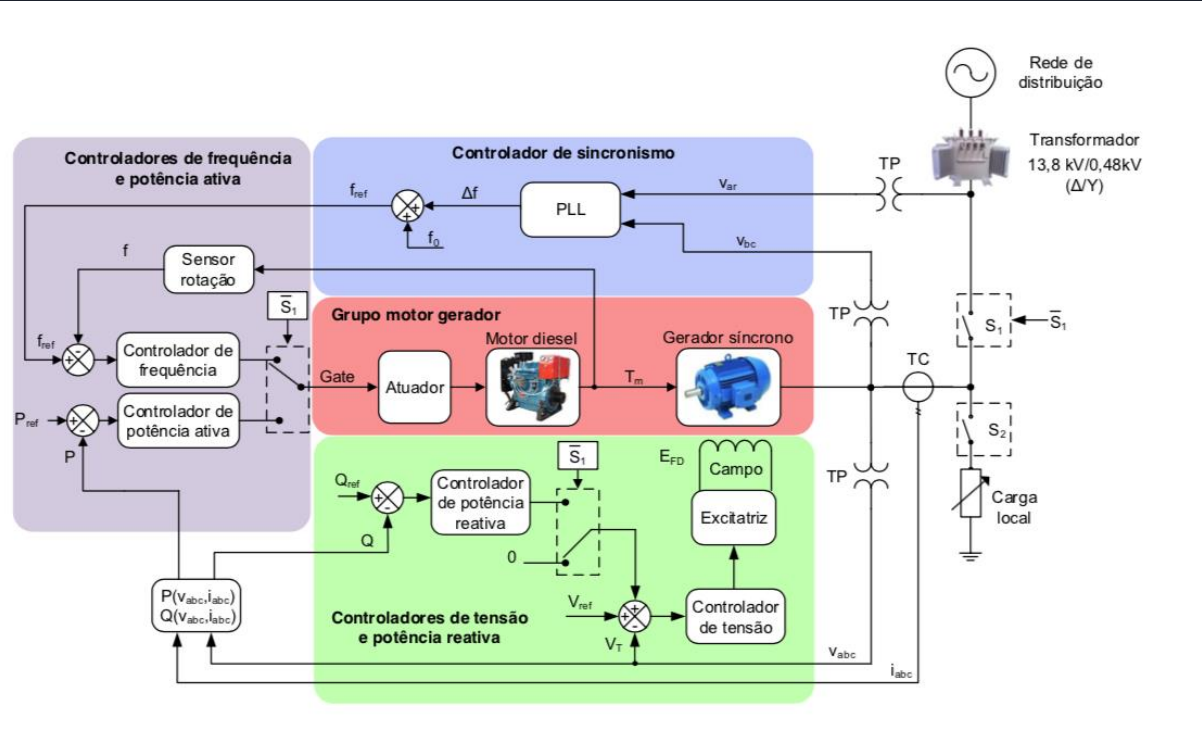


Controle Não Linear Aplicado

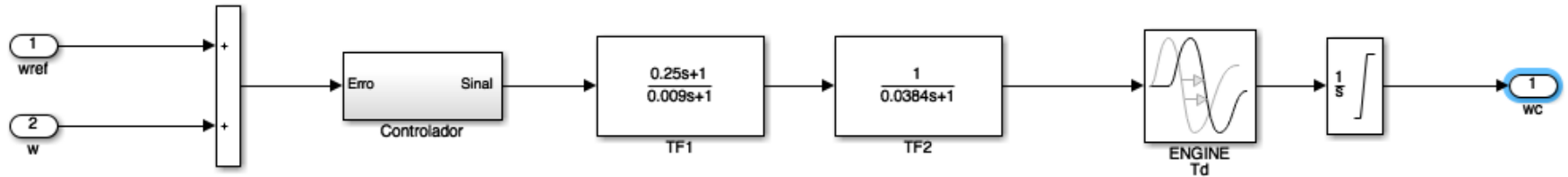
Controlador Fuzzy PD+I

Prof^a Dr^a Vilma Alves de Oliveira
João Lucas Silveira Silva

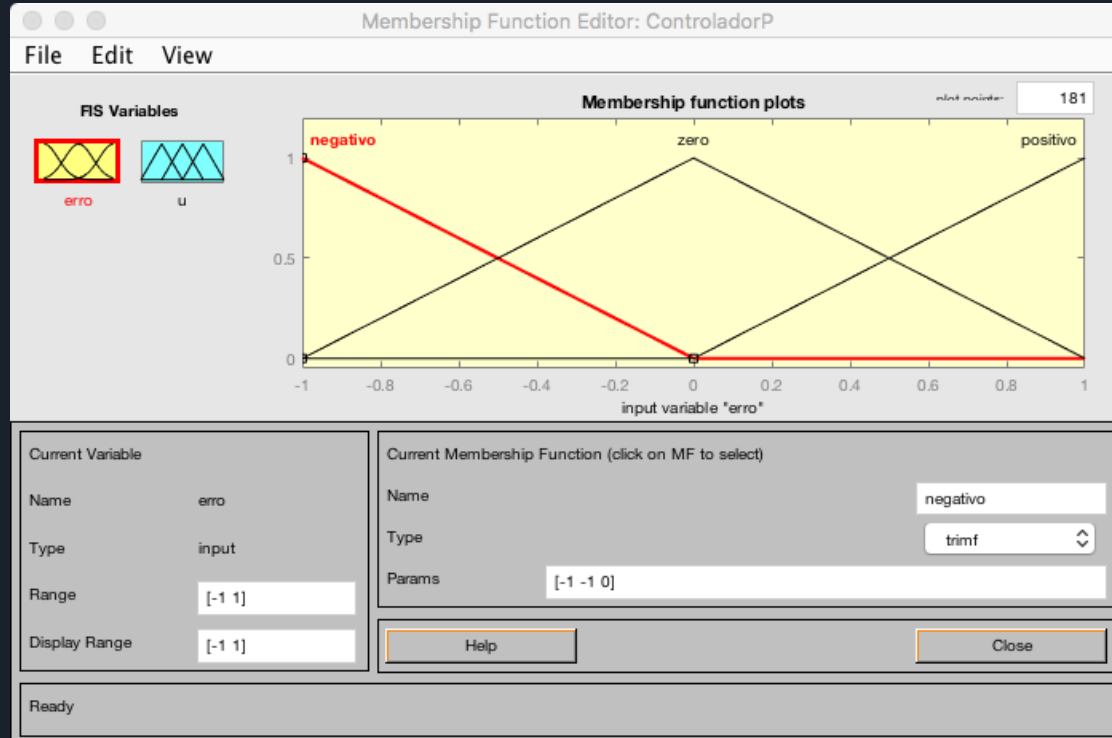
1 - Sistema a ser controlado: Gerador Diesel



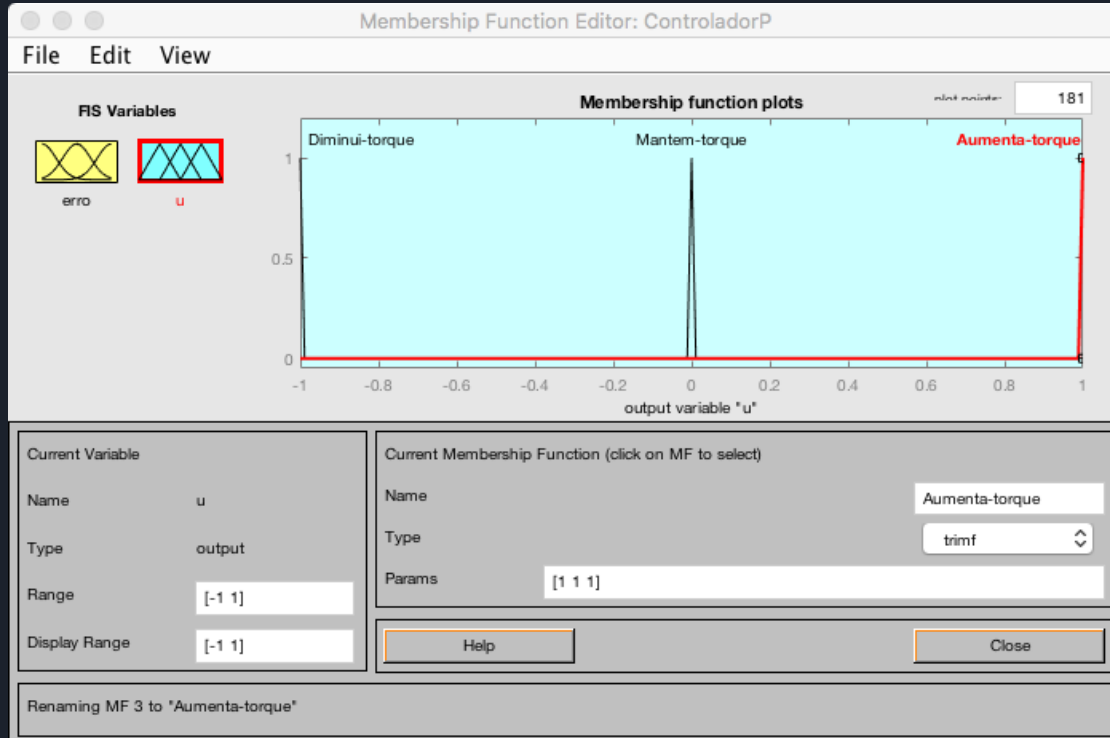
2 - Esquema Sistema de controle:



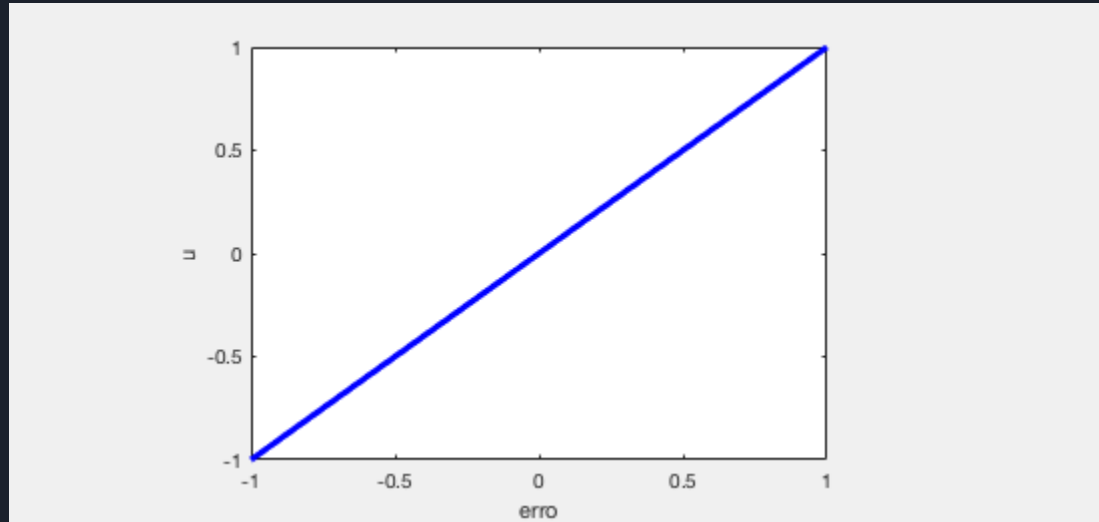
3 - Controlador P Fuzzy: Entrada



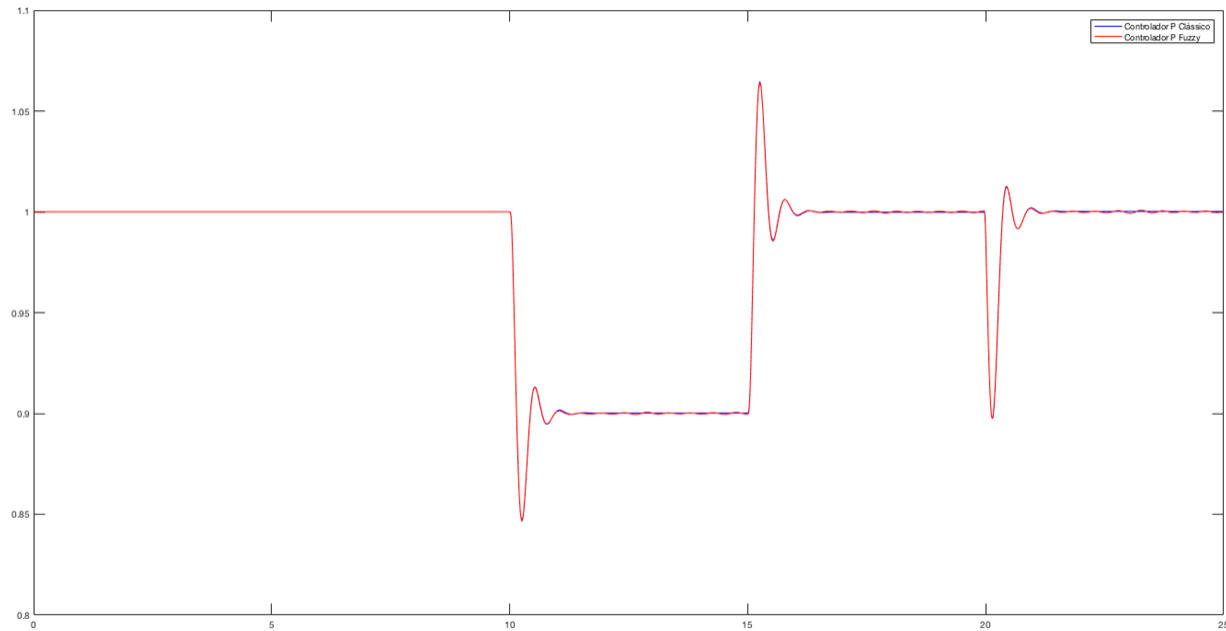
4 - Controlador P Fuzzy: Saída



5 - Controlador P Fuzzy: Superfície



6 - Controlador P: Fuzzy x Clássico



7 - Controlador PD Linear Fuzzy: Entradas

Membership Function Editor: ControladorPDlinear

File Edit View

FIS Variables

- erro
- saida
- erro-derivativo

Membership function plots

input variable "erro"

Current Variable

Name: erro

Type: input

Range: [-1 1]

Display Range: [-1 1]

Current Membership Function (click on MF to select)

Name: negativo

Type: trimf

Params: [-1 -1 0]

Help Close

Ready

Membership Function Editor: ControladorPDlinear

File Edit View

FIS Variables

- erro
- saida
- erro-derivativo

Membership function plots

input variable "erro-derivativo"

Current Variable

Name: erro-derivativo

Type: input

Range: [-1 1]

Display Range: [-1 1]

Current Membership Function (click on MF to select)

Name: negativo

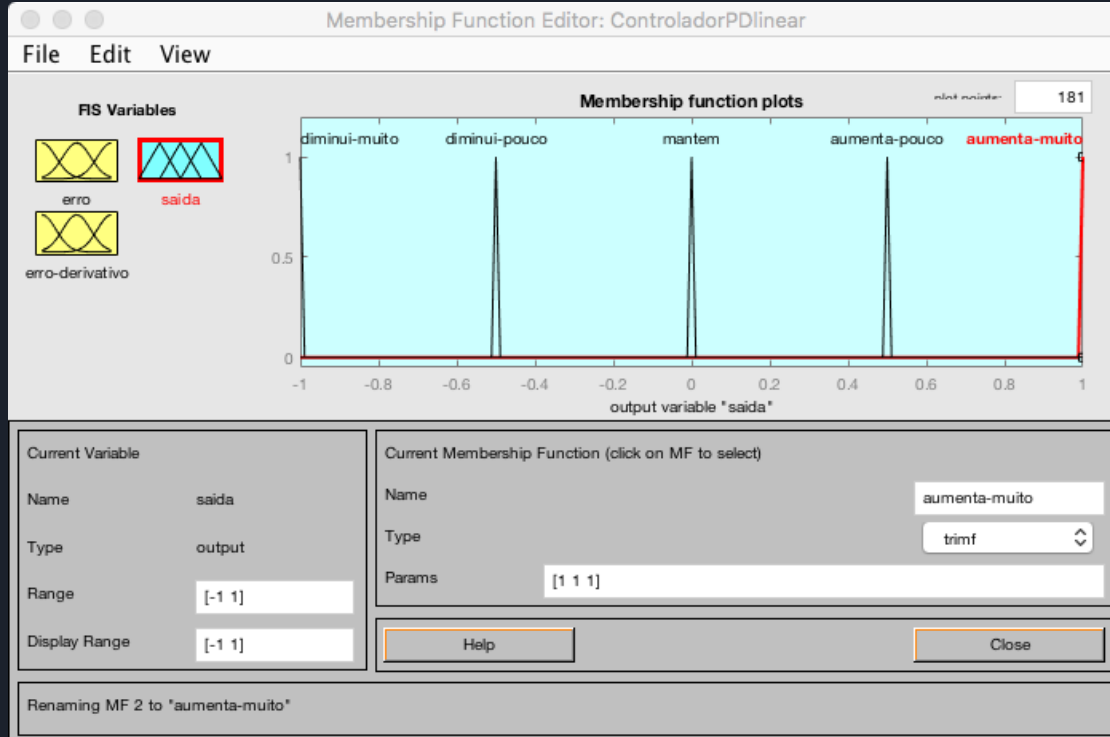
Type: trimf

Params: [-1 -1 0]

Help Close

Selected variable "erro-derivativo"

8 - Controlador PD Linear Fuzzy: Saída



9 - Controlador PD Linear Fuzzy: Regras

Rule Editor: ControladorPDlinear

File Edit View Options

1. If (erro is negativo) and (erro-derivativo is negativo) then (saida is diminui-muito) (1)
2. If (erro is negativo) and (erro-derivativo is positivo) then (saida is mantem) (1)
3. If (erro is negativo) and (erro-derivativo is zero) then (saida is diminui-pouco) (1)
4. If (erro is zero) and (erro-derivativo is negativo) then (saida is diminui-pouco) (1)
5. If (erro is zero) and (erro-derivativo is positivo) then (saida is aumenta-pouco) (1)
6. If (erro is zero) and (erro-derivativo is zero) then (saida is mantem) (1)
7. If (erro is positivo) and (erro-derivativo is negativo) then (saida is mantem) (1)
8. If (erro is positivo) and (erro-derivativo is positivo) then (saida is aumenta-muito) (1)
9. If (erro is positivo) and (erro-derivativo is zero) then (saida is aumenta-pouco) (1)

If

erro is

- negativo
- zero
- positivo
- none

and

erro-derivativo is

- negativo
- zero
- positivo
- none

Then

saida is

- diminui-muito
- aumenta-muito
- mantem
- diminui-pouco
- aumenta-pouco

not

not

not

Connection

or

and

Weight:

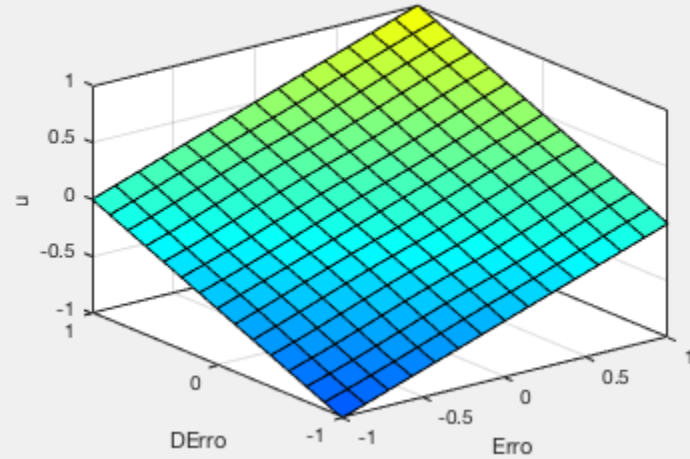
1

Delete rule Add rule Change rule << >>

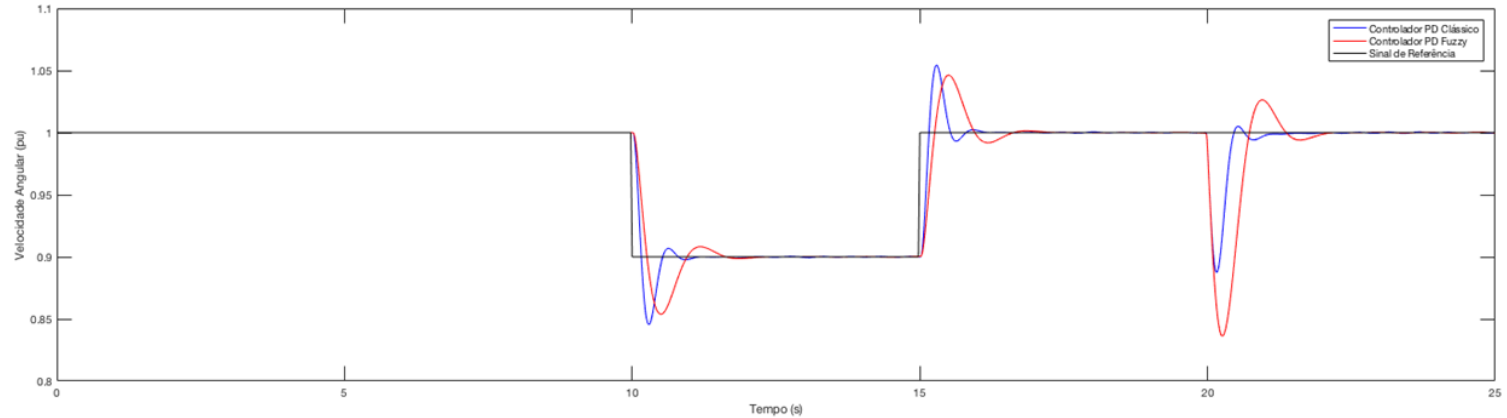
FIS Name: ControladorPDlinear

Help Close

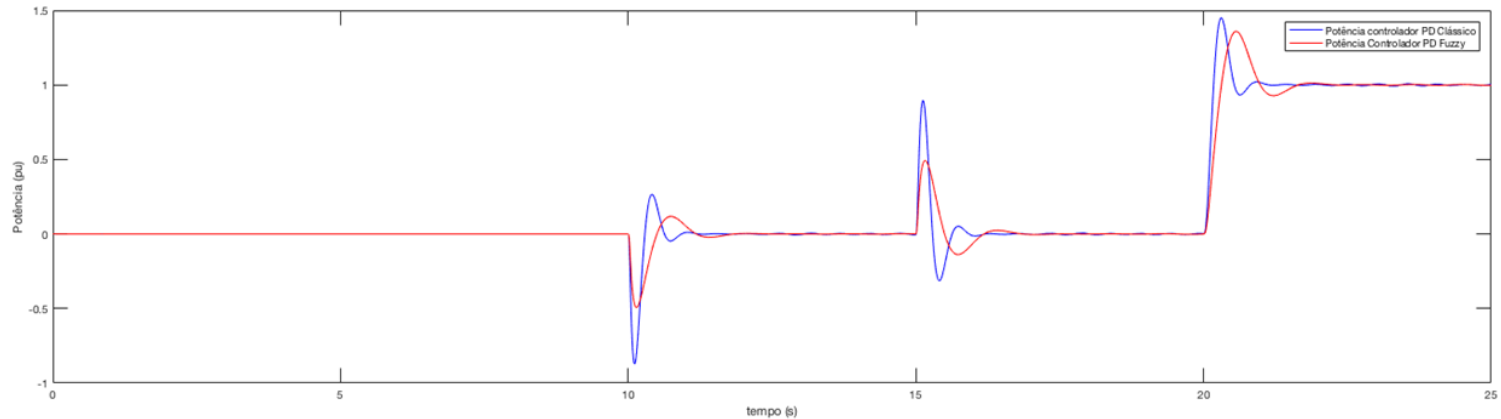
10 - Controlador PD Linear Fuzzy: Superfície



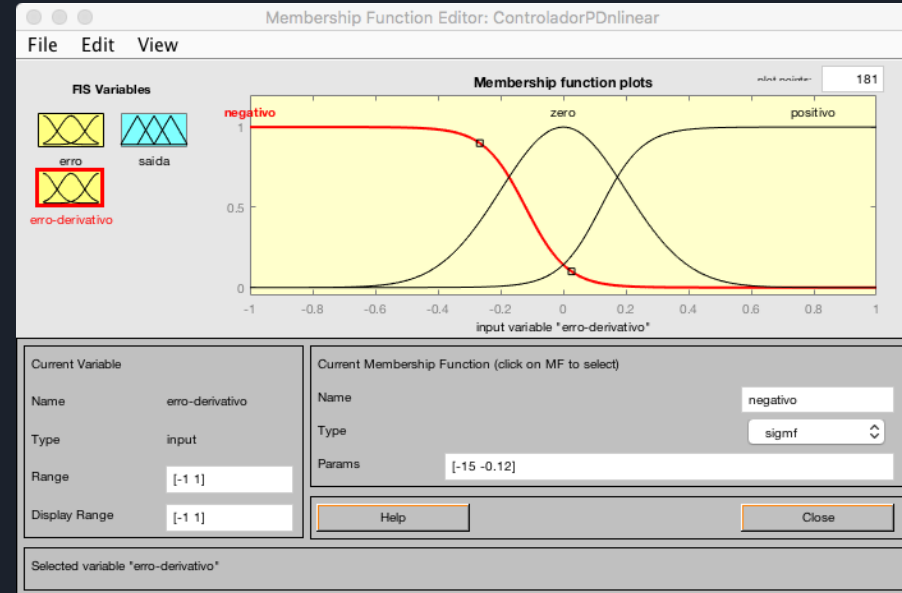
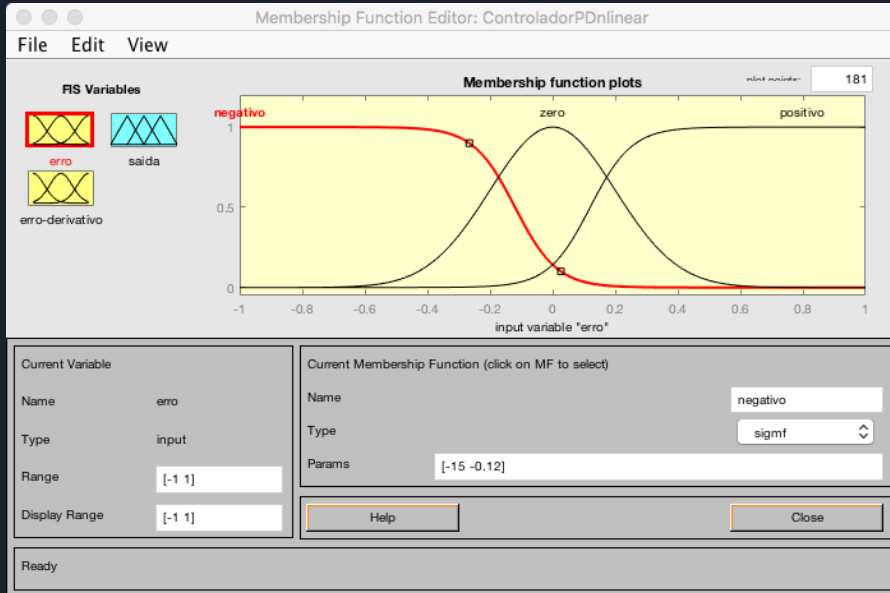
11 - Controlador PD Linear: Fuzzy x Clássico



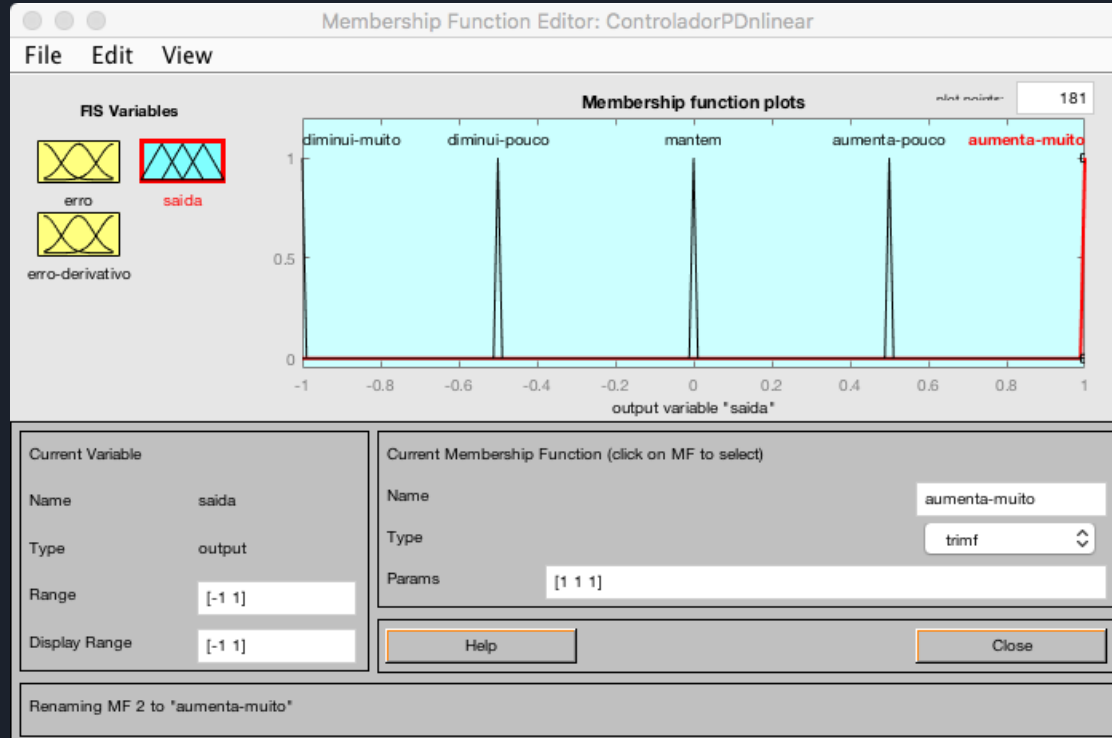
12 - Controlador PD Linear: Potência



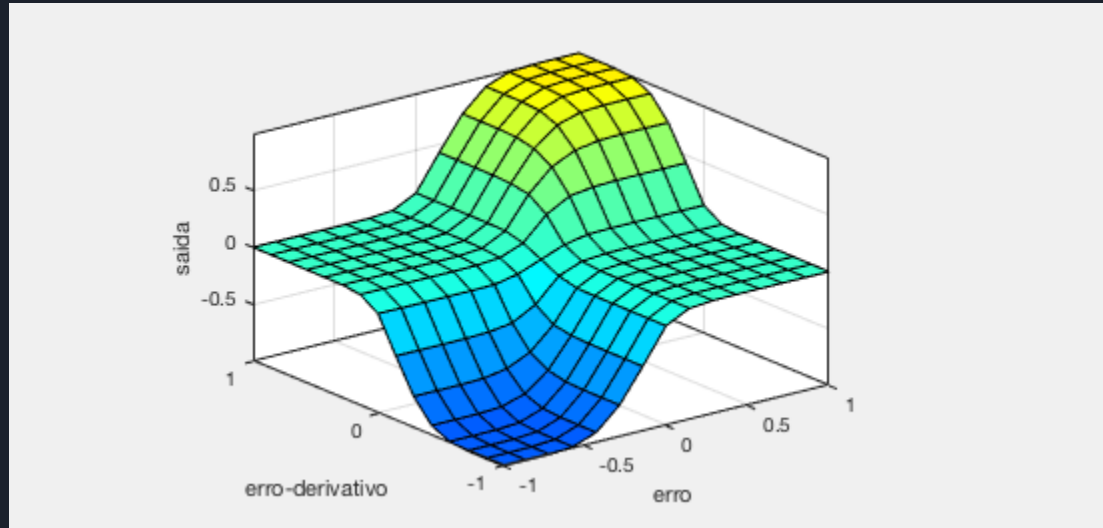
13 - Controlador PD Não Linear: Entradas



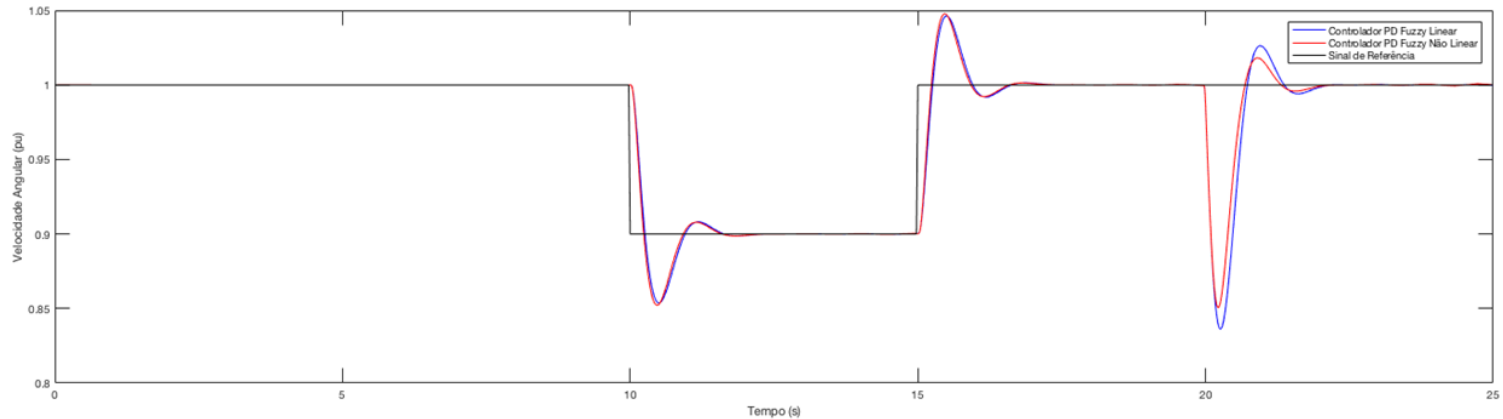
14 - Controlador PD Não Linear: Saída



15 - Controlador PD Não Linear: Superfície

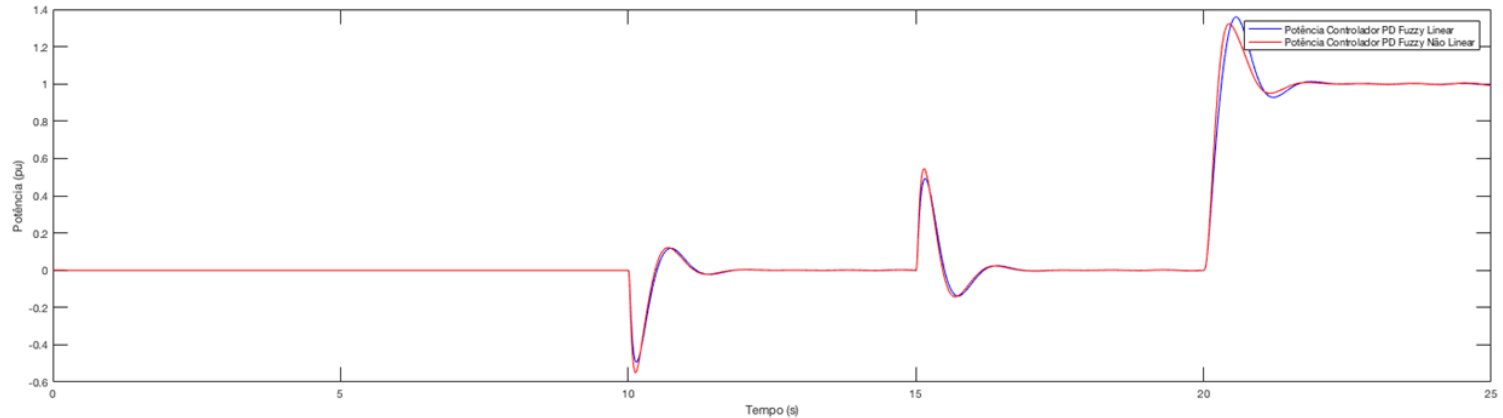


16 - Controlador PD: Não Linear x Linear



17 - Controlador PD: Não Linear x Linear

Potência



18 - Controlador Fuzzy: PD X PD+I

