

“Projeto Slug”

I. Aparato Experimental

II. Processamento de Dados

I. Aparto Experimental

a) Descrição Geral

b) Misturadores

c) Seção de Teste

a) Descrição Geral

■ Circuito de Líquido

- bombas
- filtros
- medidores de vazão
- tanques de armazenagem
- válvulas

■ Circuito de Gás

- compressores
- vaso pulmão
- filtros
- válvulas

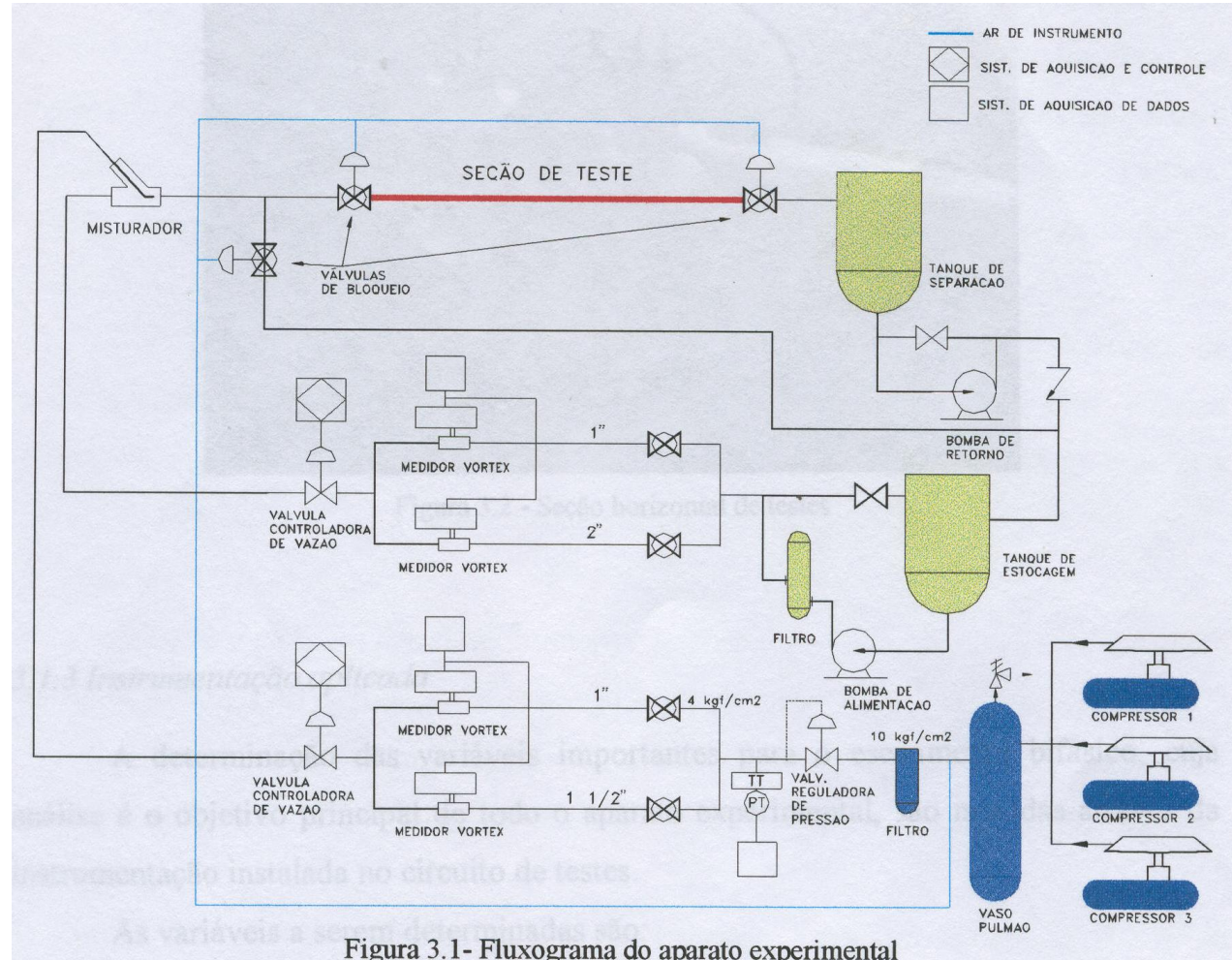
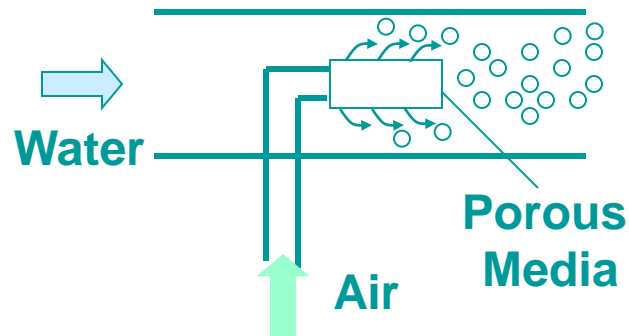


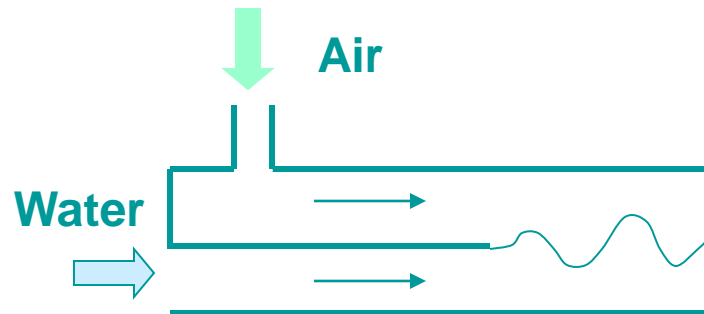
Figura 3.1- Fluxograma do aparato experimental

b) Misturadores

- Misturador de Correntes Concêntricas



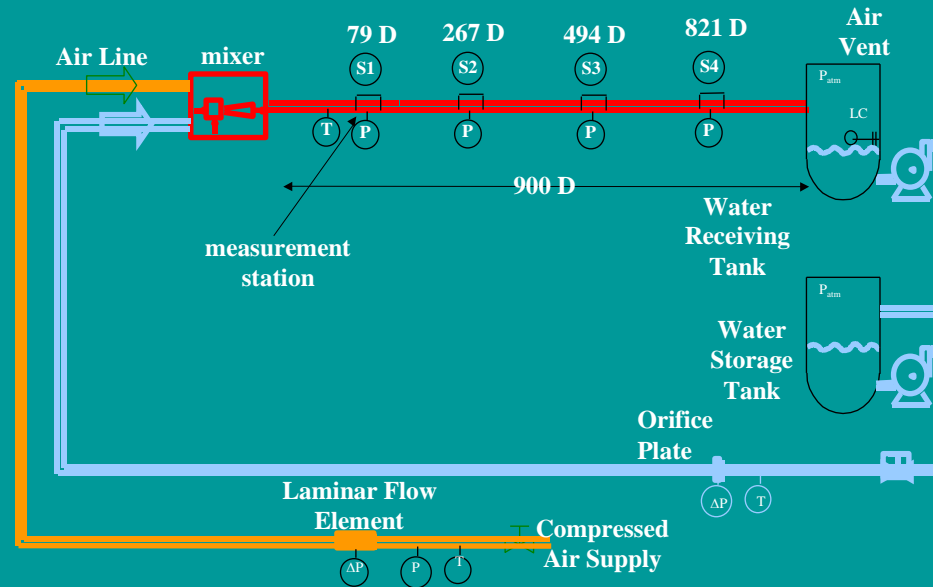
- Misturador de Correntes Paralelas



c) Seção de Teste

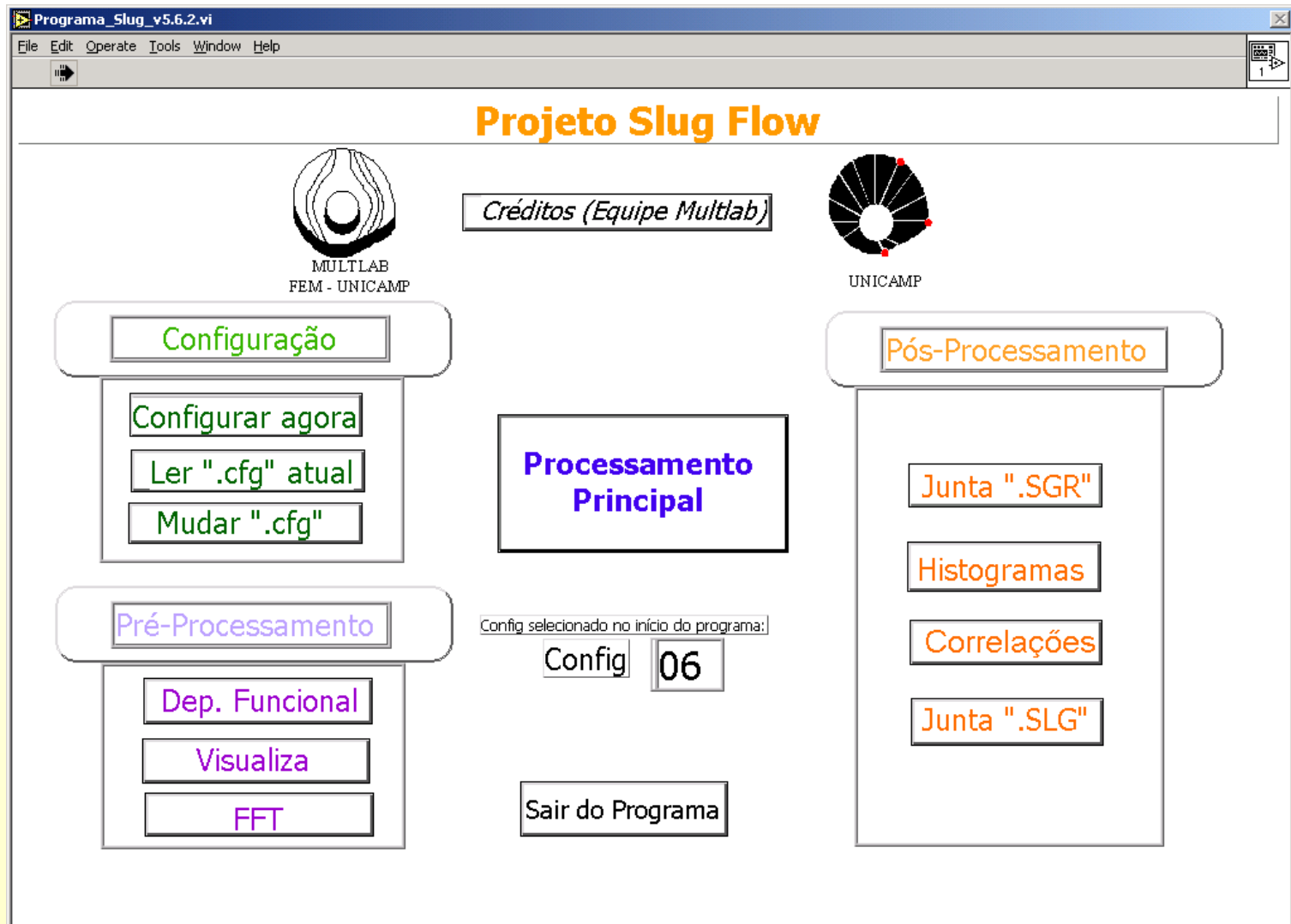
CIRCUITO EXPERIMENTAL

(Representação Esquemática)





II. Processamento de Dados



a) Configuração

Configurações

File Edit Operate Tools Window Help

Configurações

misturador gás/líquido

Estação1 Estação2 Estação3 Estação4

click aqui click aqui click aqui click aqui

Configurações Locais

Distância entre sondas (mm)
50.00

Diâmetro do tubo (mm)
26.00

Densidade do líquido (Kg/m3)
1190.00

Viscosidade do líquido (N*s/m2)
2.55E-2

Pressão Atm local (mBar)
947.00

Equação de Temperatura (oC)

$$T = A * V + B$$

A: 0.00000 B: 0.00000

Gravar
Ok

Sair
Ok

estacaoconf.vi

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Estação 1

Equações altura de filme nas sonda 1 ou 2 (1/mm)

A

B

$1/H_{s1} = \text{▼} 1.0824000 * 1 / \text{▼} -1.0433000$

A2

B2

$1/H_{s2} = \text{▼} 0.0000000 * 1 / \text{▼} 0.0000000$

Sonda calibrada

1

Equação do Transdutor de Pressão (mBar)

C

D

$P = \text{▼} 185.7500000 * V \text{▼} -128.860000$

Distância da misturador (mm)

$\text{▼} 3300.00$

Salvar

Ok

Sair

Ok

Escreve_Config.vi

File Edit Operate Tools Window Help

→

⬆

1

▶

Parâmetros de Configuração de Entrada

Último Arquivo a ser lido :

F:\Testes\CLICERINA\Injetor Correntes Paralelas-Configs06e07\teste_03_06_02\

☐ Desejo salvar o arquivo ".cfg" em ".doc" (mantendo ambos no diretório de origem).

Distancia #1(mm)

3300.00

Distancia #2(mm)

6900

Dist. entre Sondas (mm)

50.00

Viscosidade do Líquido (Kg/m.s)

0.025

Equação altura filme Estação #1 (1/mm)

1.0000

1.0824

-1.0433

0.0000

0.0000

Equação altura filme Estação #2 (1/mm)

1.0000

0.0522

-0.0409

0.0000

0.0000

Equação altura filme Estação #3 (1/mm)

1.0000

0.0266

-0.0018

0.0000

0.0000

Equação altura filme Estação #4 (1/mm)

1.0000

0.0692

-0.0635

0.0000

0.0000

(1/h).....= a1.(1/Volt)+ a0

OU

b1.(1/Volt) + b0

Distancia #3(mm)

12860

Distancia #4(mm)

20210

Densidade do Líquido (Kg/m3)

1190.00

Equação Pressao #1(mBar)

185.75

-128.86

Equação Pressao #2 (mBar)

140.75

-122.42

Equação Pressao #3 (mBar)

118.16

-92.46

Equação Pressao #4 (mBar)

16.32

-13.49

P = a1.Volt + a0

Equação de Temperatura (oC)

0.00

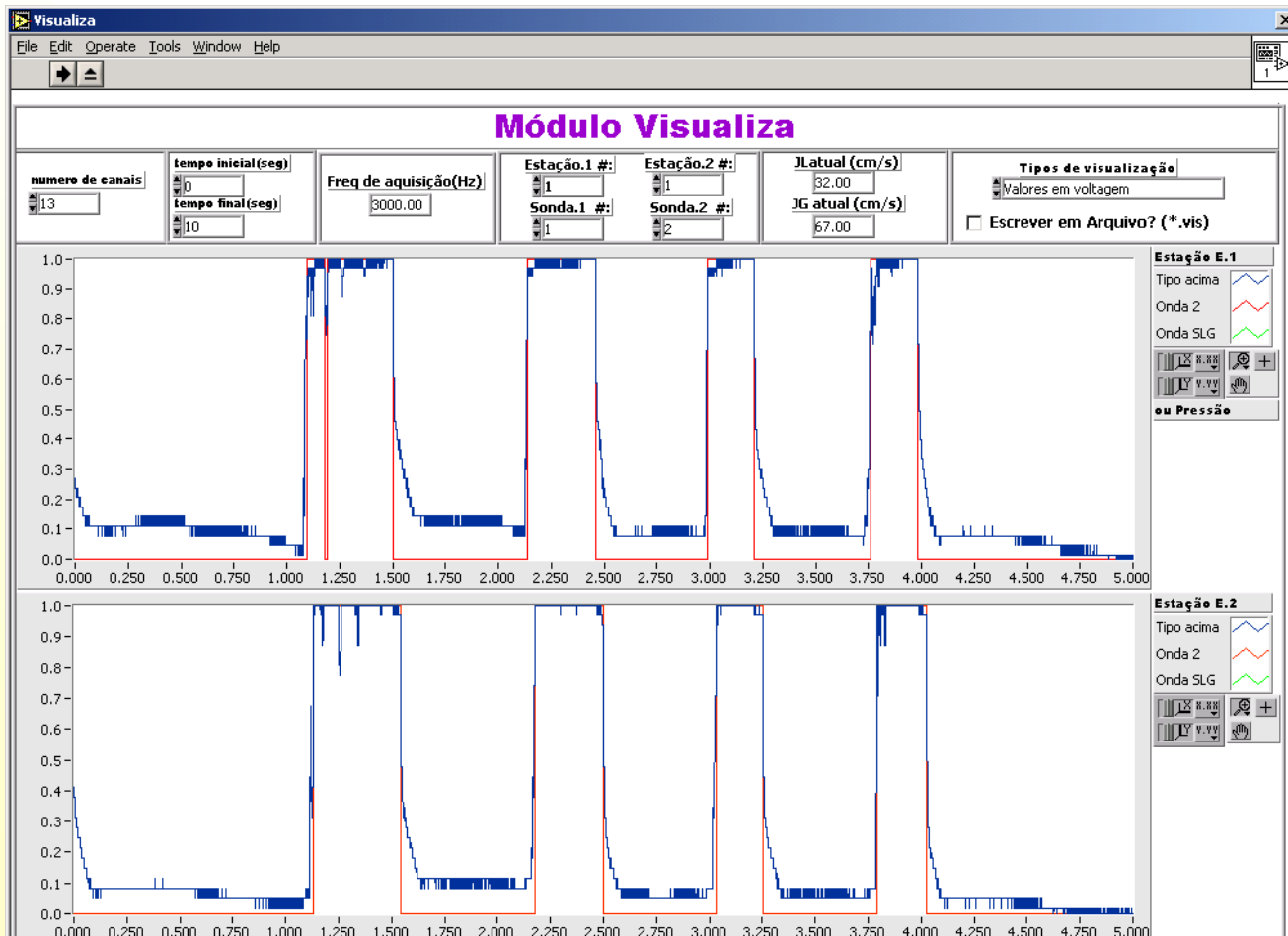
0.00

T = a1.Volt + a0

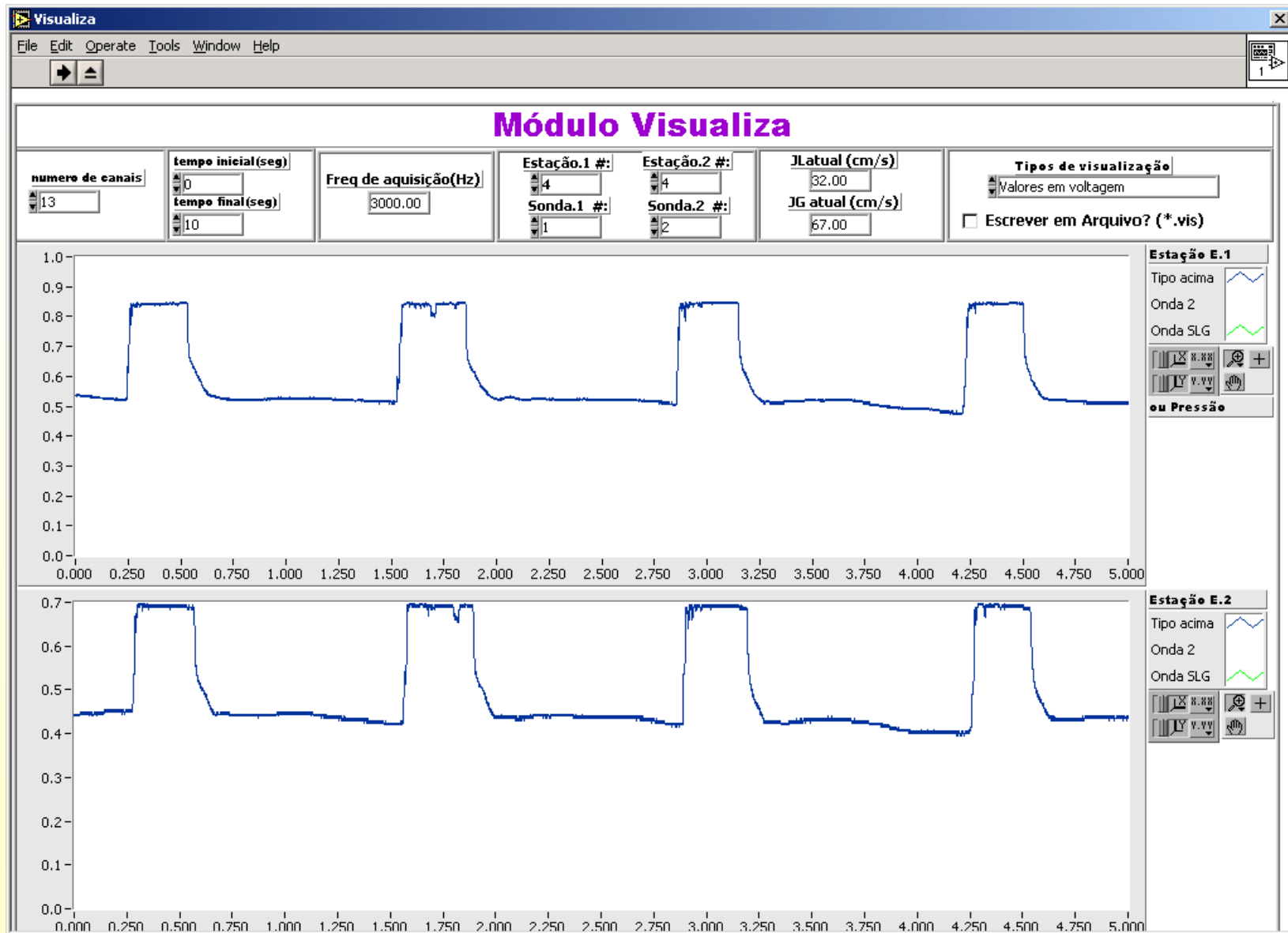
a) Pré-Processamento

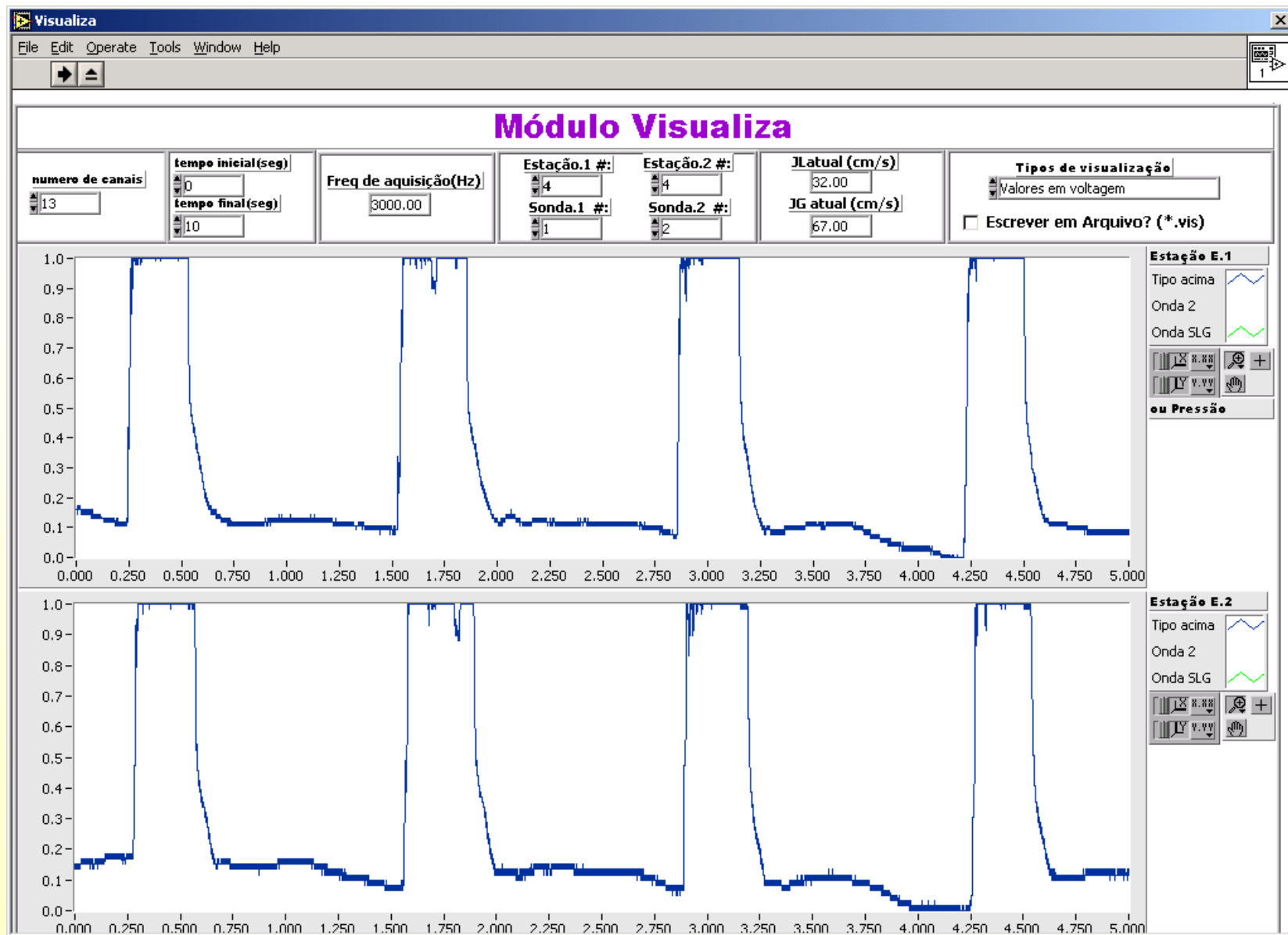
■ Normalização do Sinal

$$V^* = \frac{(V - V_{mim})}{(V_{máx} - V_{mim})}$$

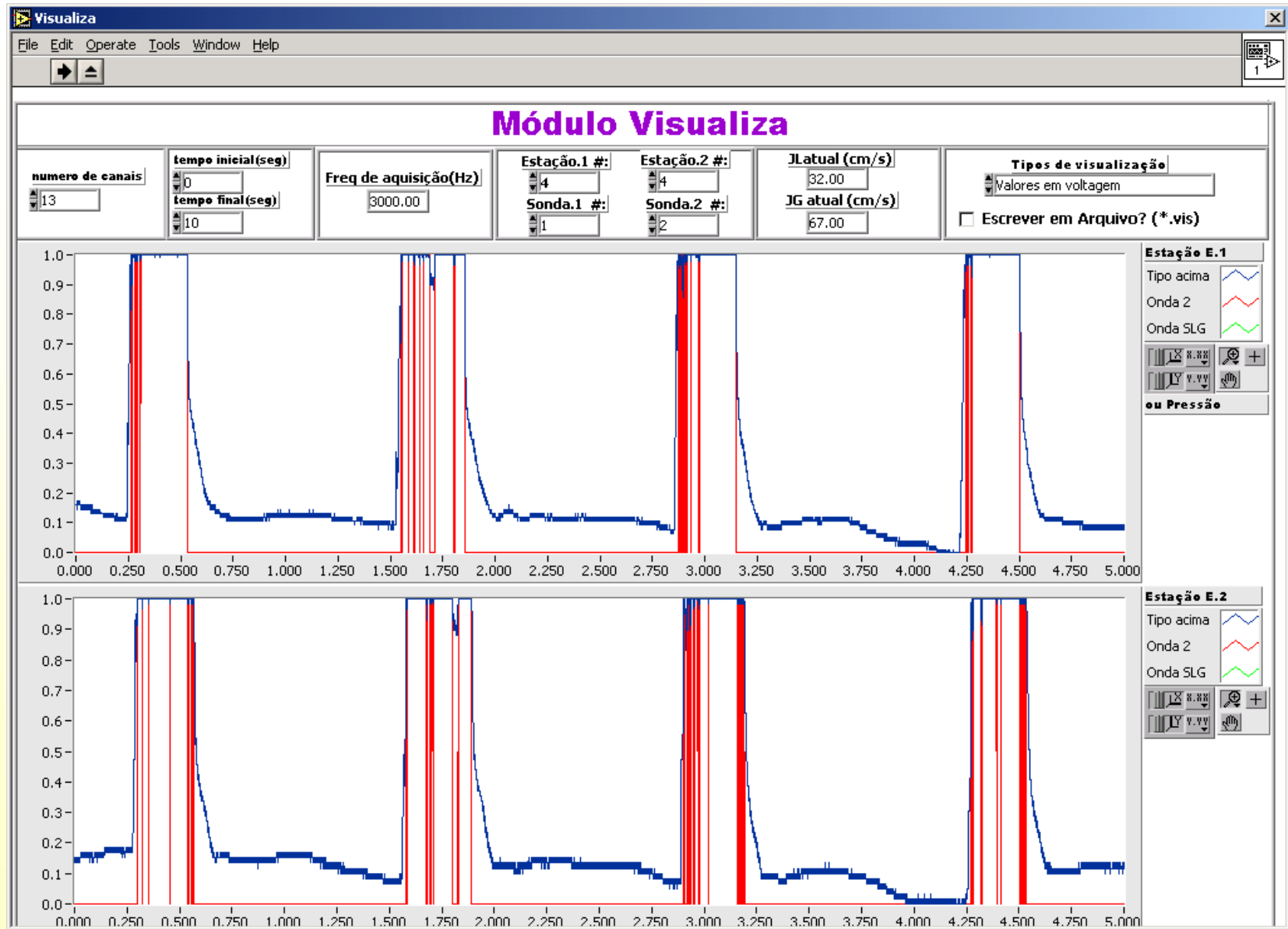


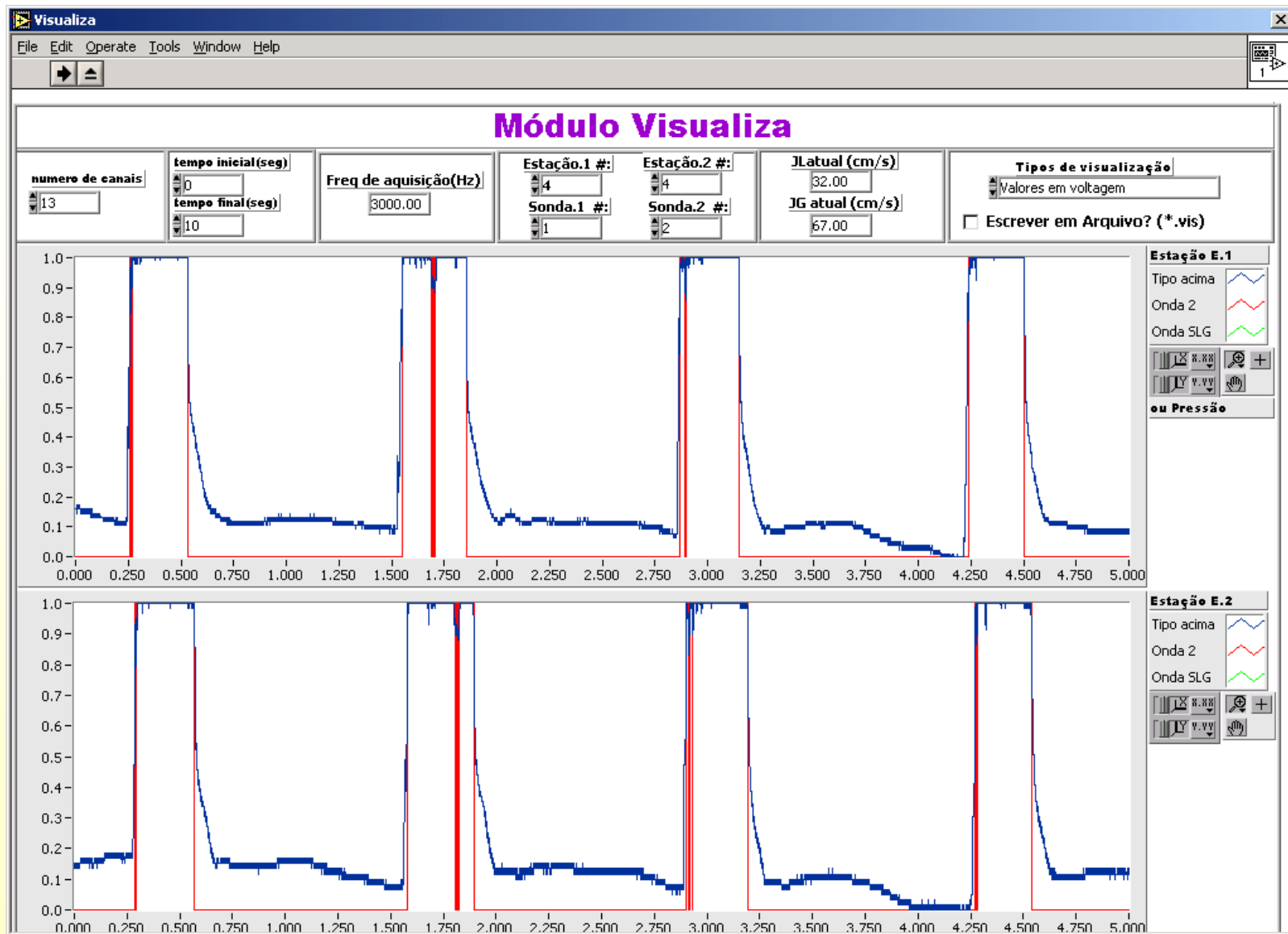
Fator Normal

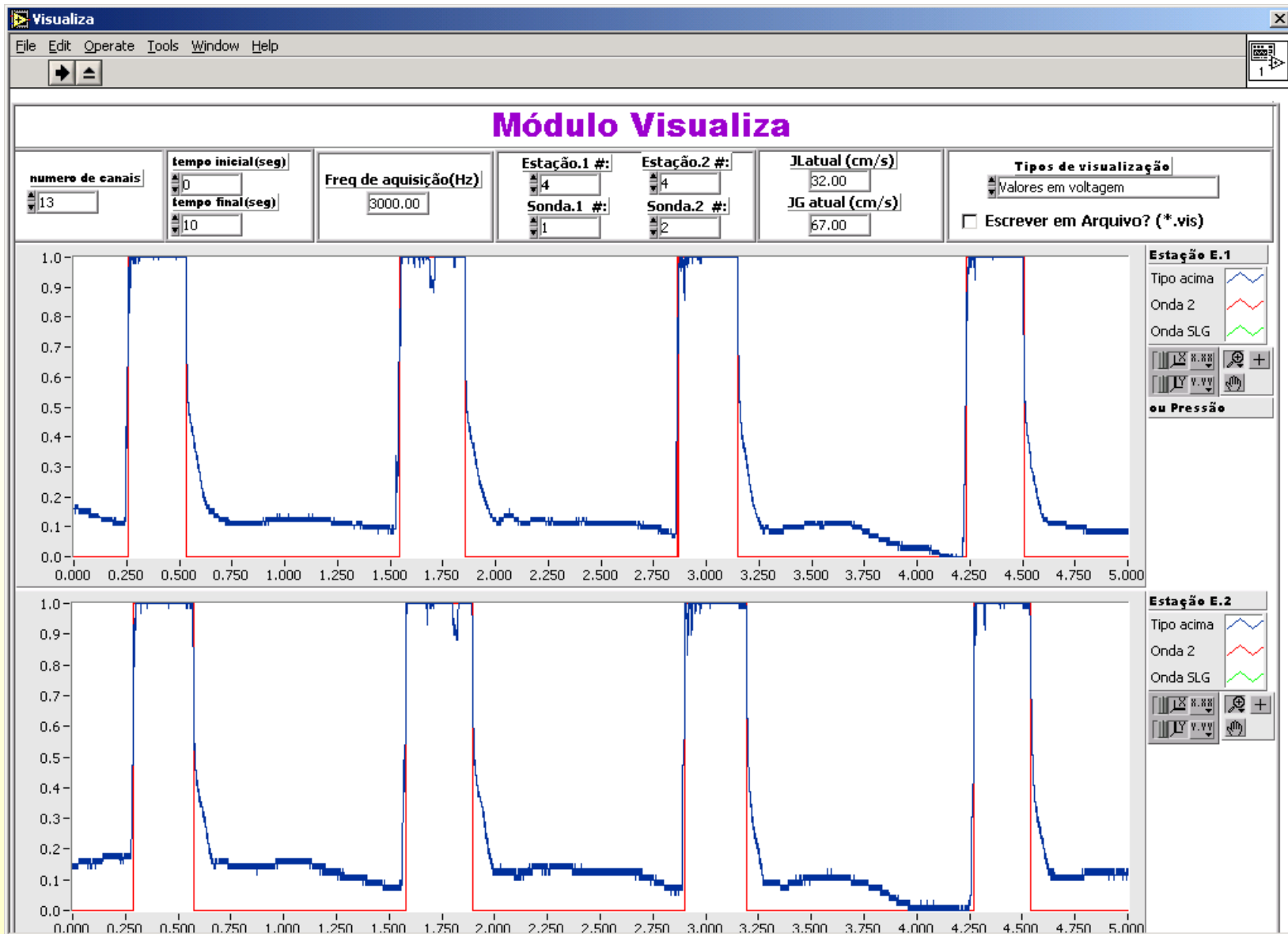


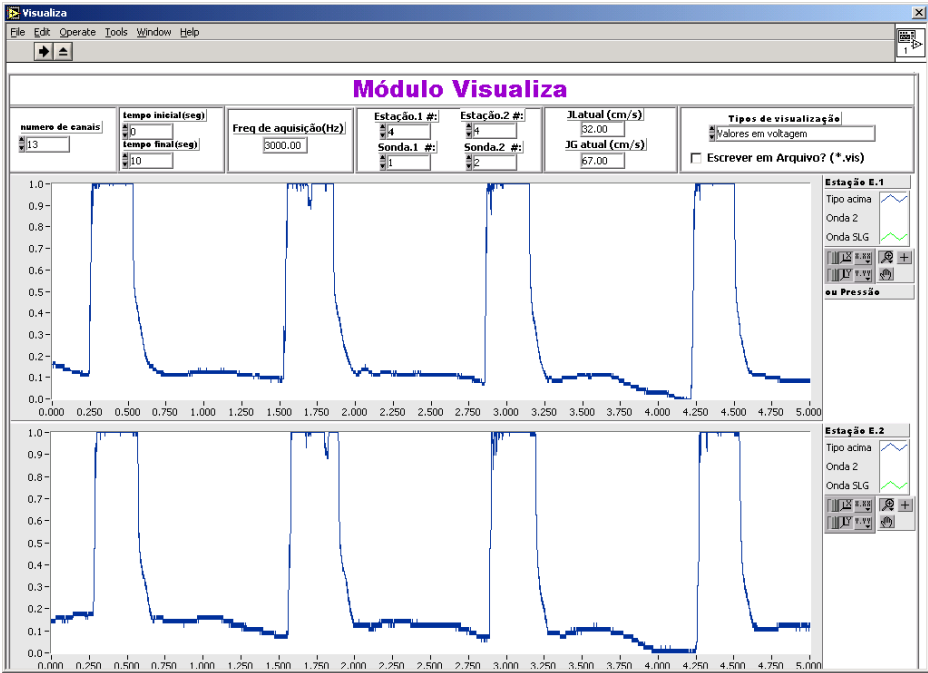
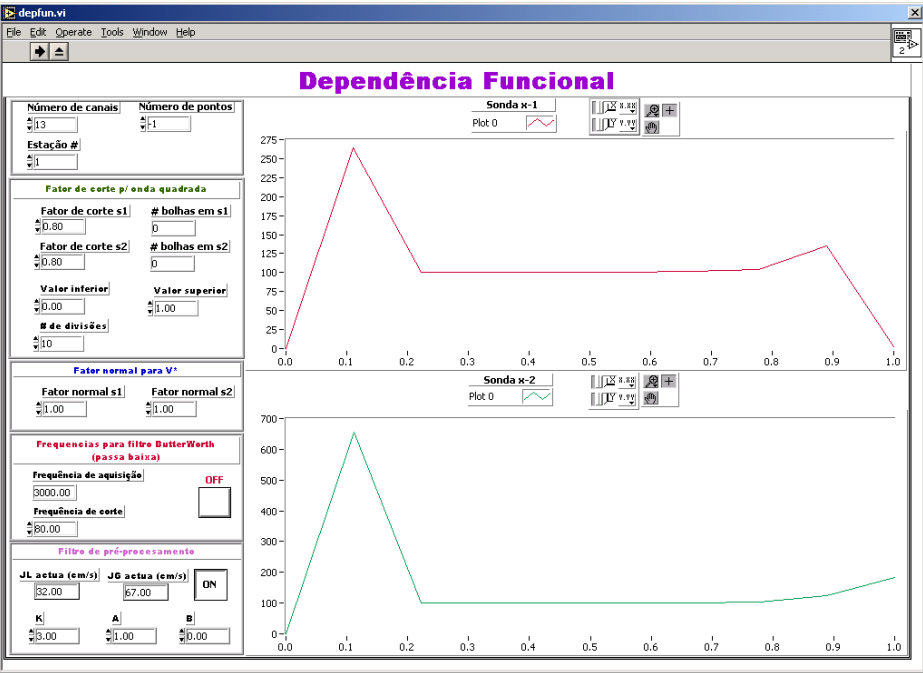


Fator de Corte









Filtro Linear

$$t = \frac{d}{(1,25.J).k}$$

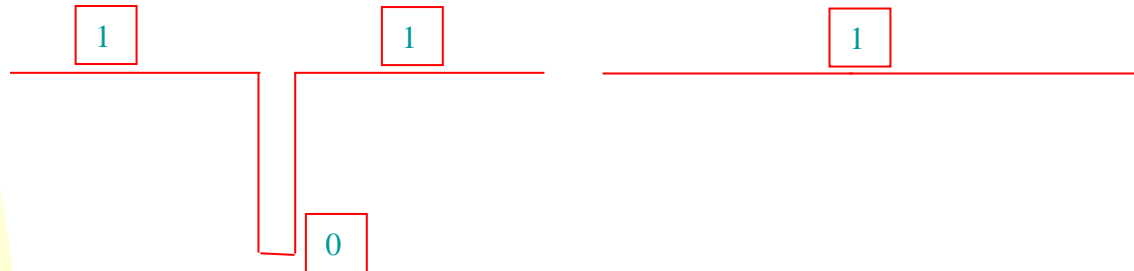
$$f = A.t + B$$

Correção do Sinal

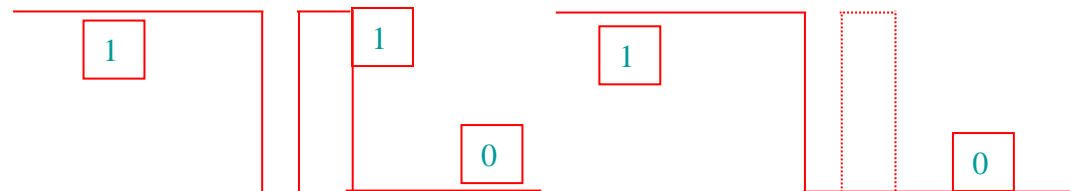
Caso 1



Caso 2

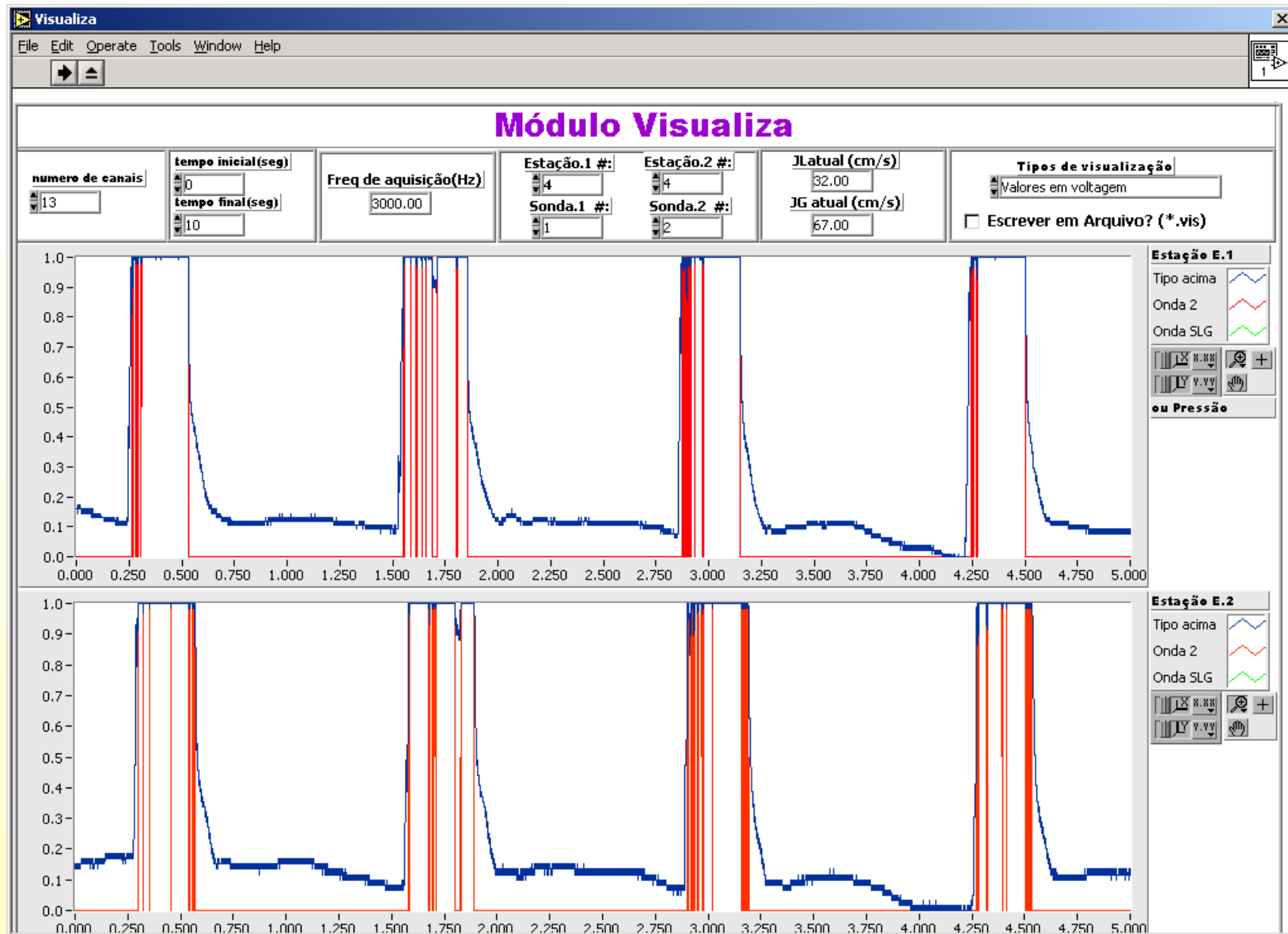


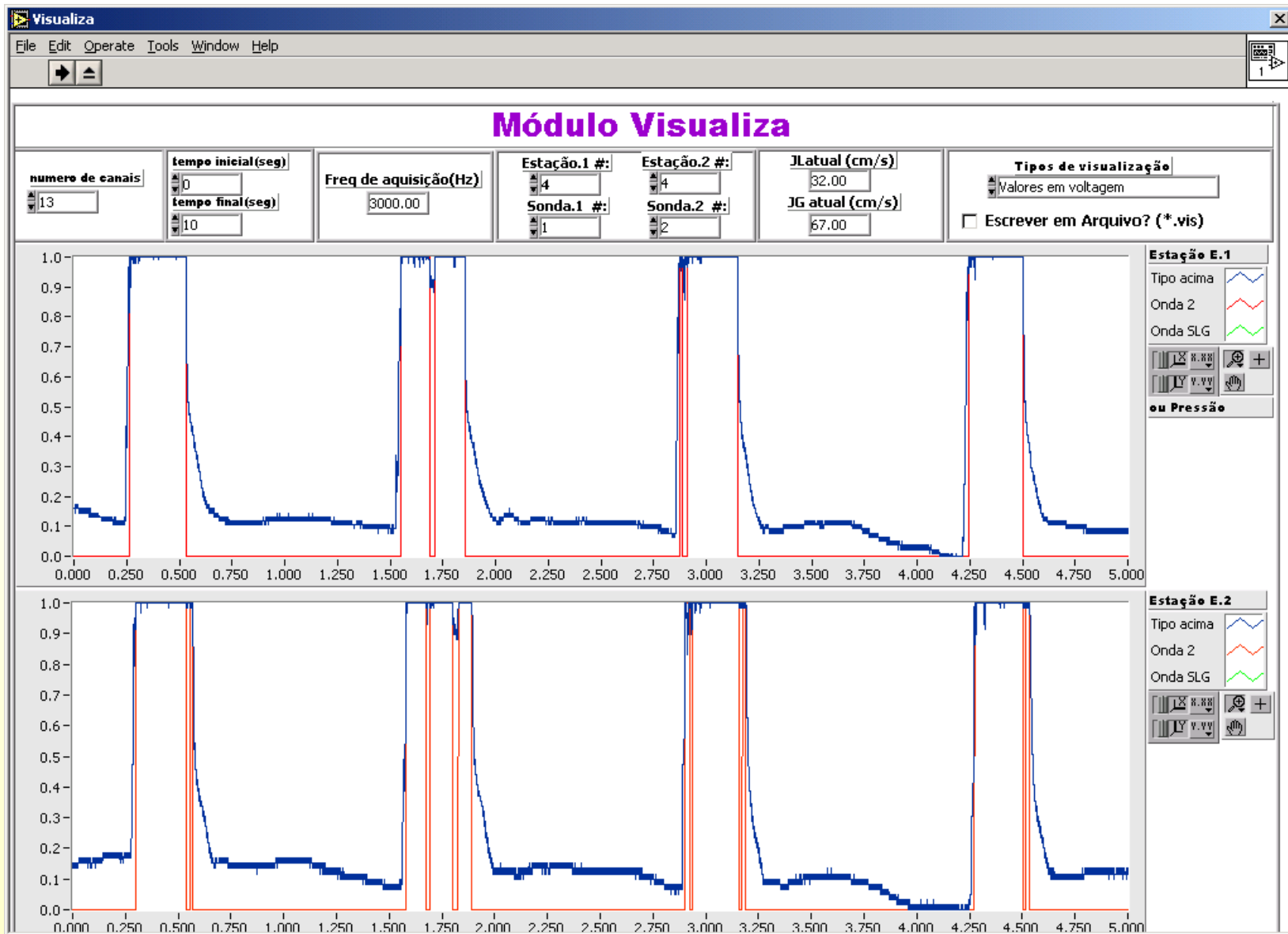
Caso 3



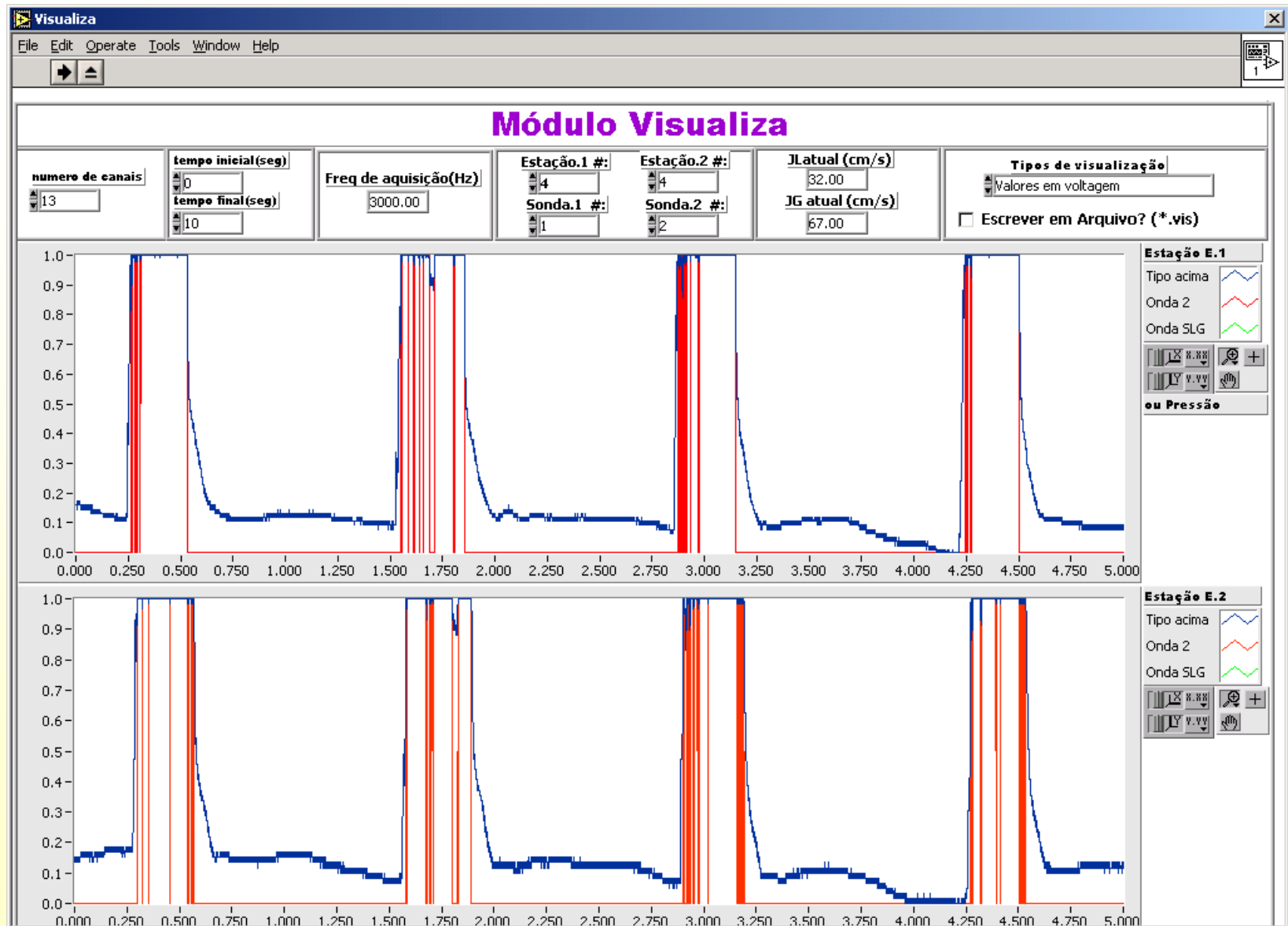
Caso 4

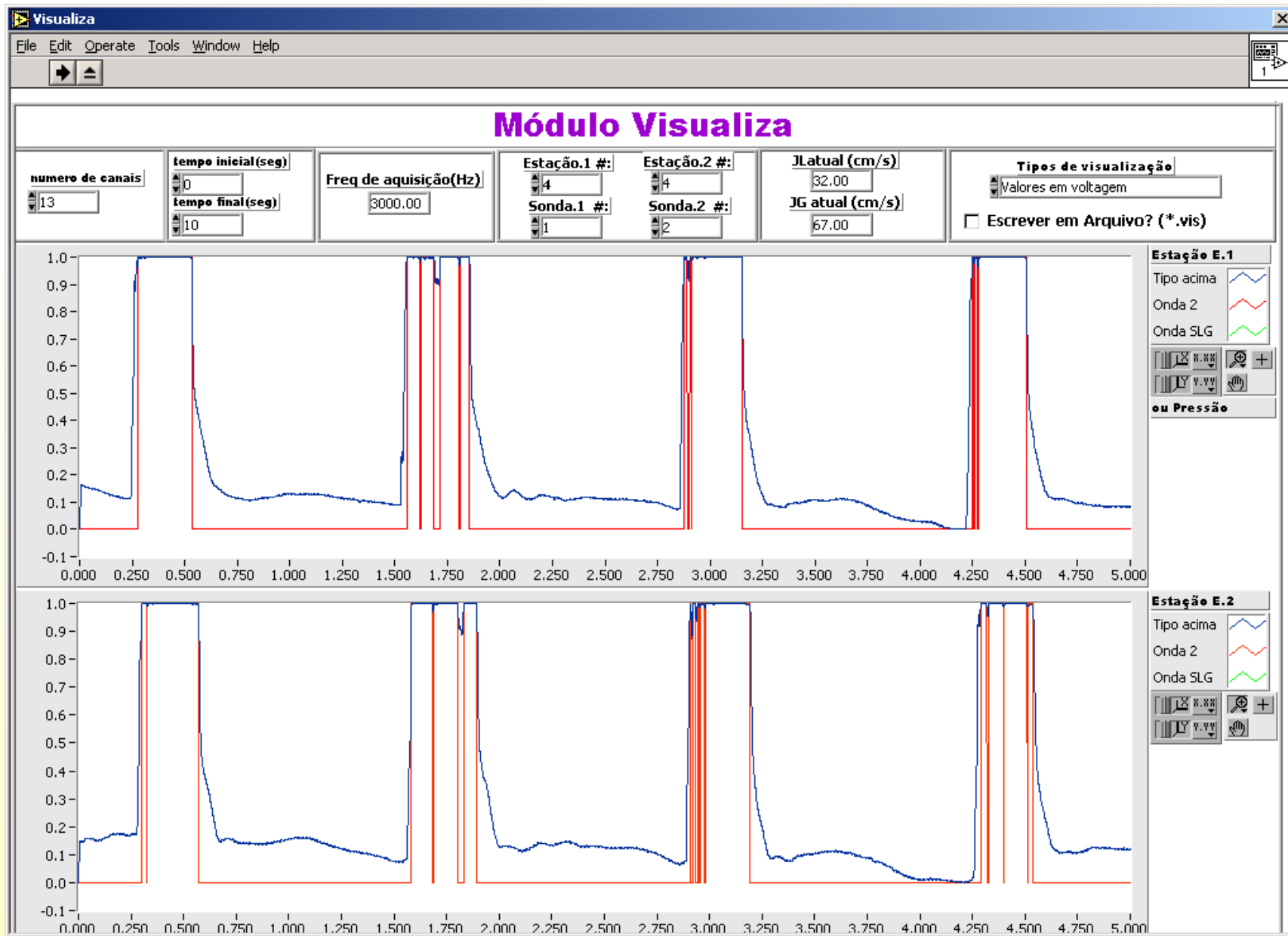


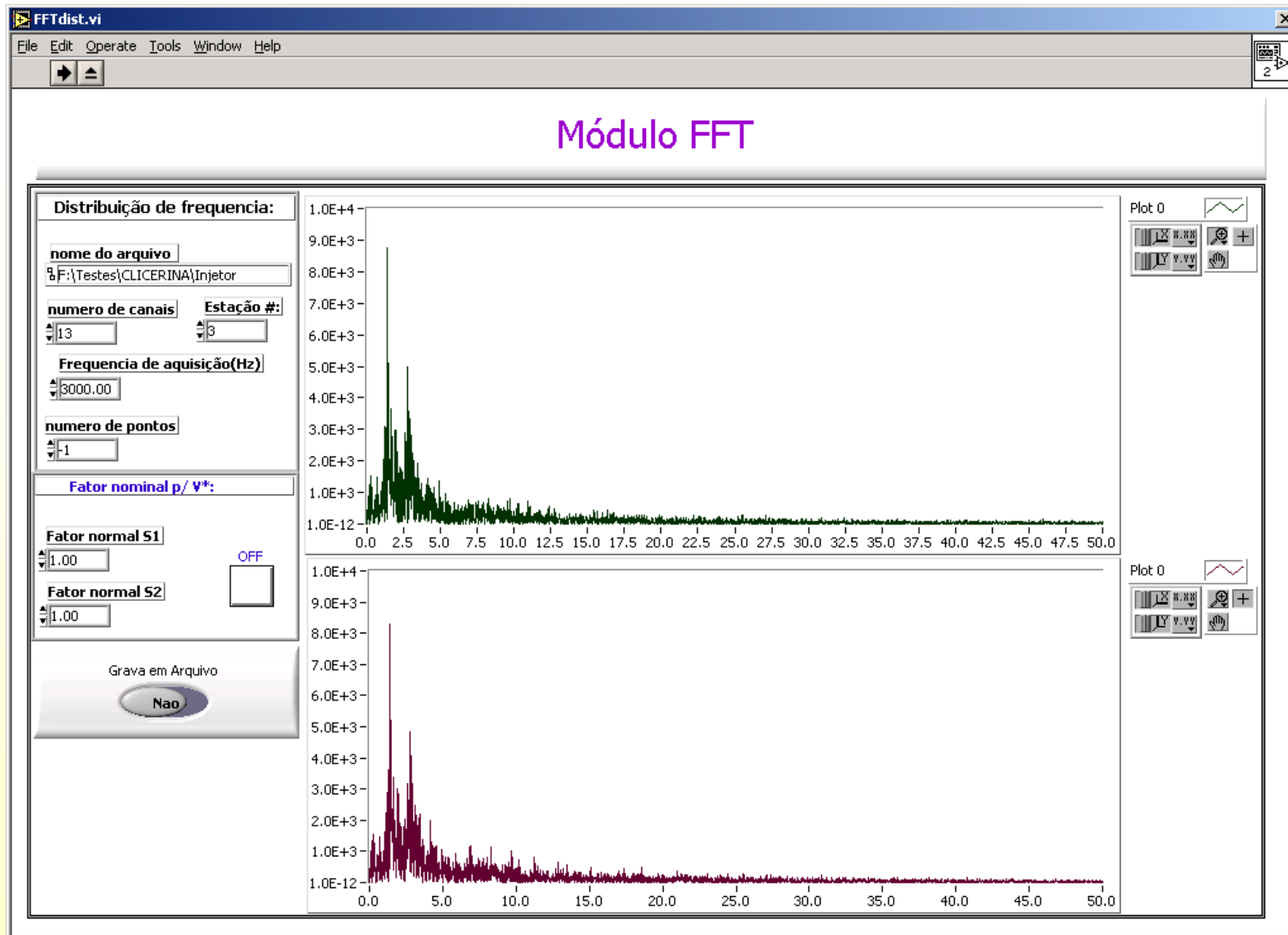




Filtro Butterworth







b) Processamento Principal

PROTOTIPO2.VI

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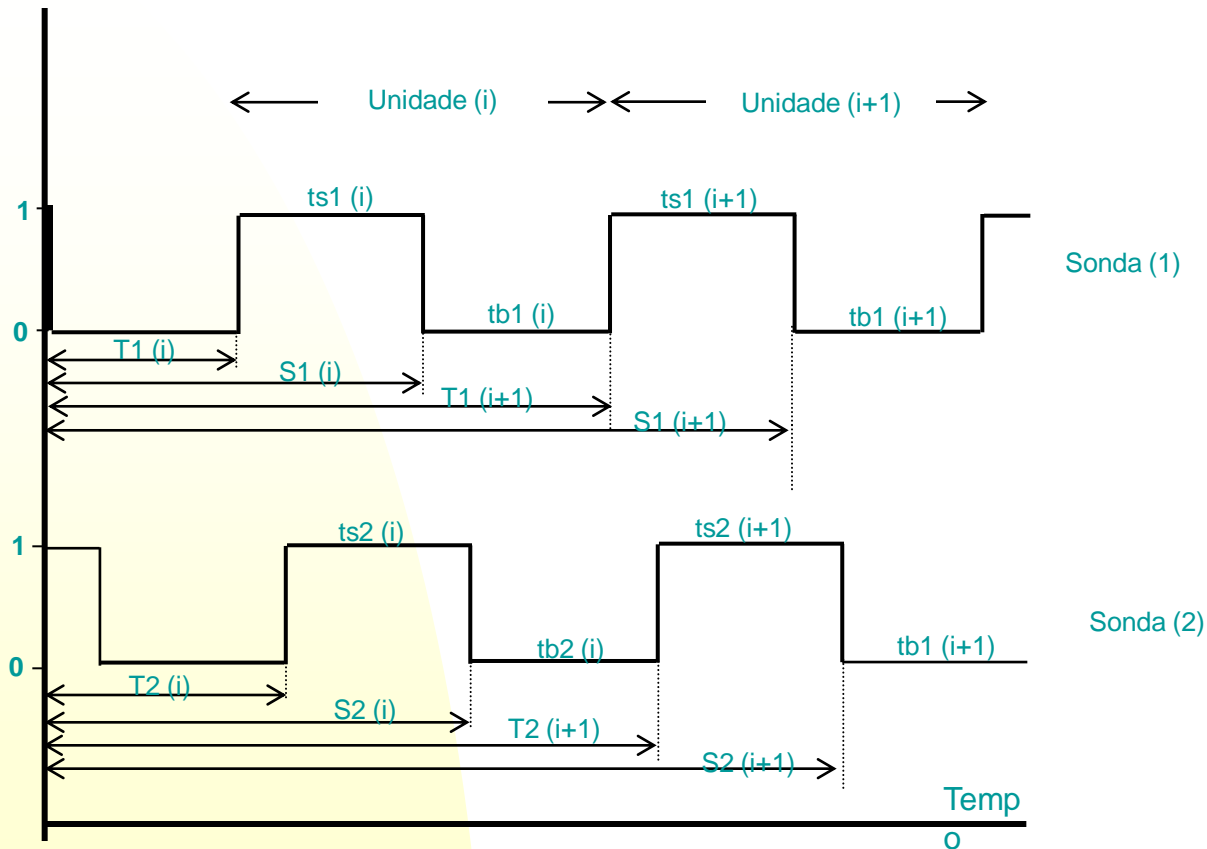
Processamento Principal

Fator normal p/ V*	Fator de corte p/ onda quadrada	Filtro de Pré-processamento	Entradas do Experimento	Fazer calculos de espessura de filme liq. da bolha
Fator Normal S1-1 ▲▼ 0.95	corte na sonda 1-1 ▲▼ 0.80	ON	numero de canais ▲▼ 13	ON
Fator Normal S1-2 ▲▼ 0.95	corte na sonda 1-2 ▲▼ 0.80	A ▲▼ 1.00	Tempo (s) ▲▼ -1	Tempo total de aquisição (s) (em relação ao # de pontos)
Fator Normal S2-1 ▲▼ 0.95	corte na sonda 2-1 ▲▼ 0.80	B ▲▼ 0.00	freq adquirida (Hz) 3000.00	0
Fator Normal S2-2 ▲▼ 0.95	corte na sonda 2-2 ▲▼ 0.80	K ▲▼ 3.00	JL actual (cm/s) 0.00	
Fator Normal S3-1 ▲▼ 0.95	corte na sonda 3-1 ▲▼ 0.80		Jg actual (cm/s) 0.00	
Fator Normal S3-2 ▲▼ 0.95	corte na sonda 3-2 ▲▼ 0.80			
Fator Normal S4-1 ▲▼ 0.95	corte na sonda 4-2 ▲▼ 0.80			
Fator Normal S4-2 ▲▼ 0.95	corte na sonda 4-1 ▲▼ 0.80			

Barra de Progresso (%)

0.0 5.0 10.0 15.0 20.0 25.0 30.0 35.0 40.0 45.0 50.0 55.0 60.0 65.0 70.0 75.0 80.0 85.0 90.0 95.0 100.0

Cálculo das Variáveis



$$\Delta t_s = T2(i) - T1(i)$$

$$V_s = \frac{L_{\text{sensor}}}{\Delta t_s}$$

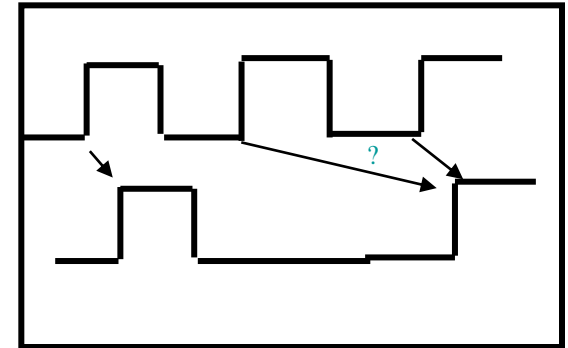
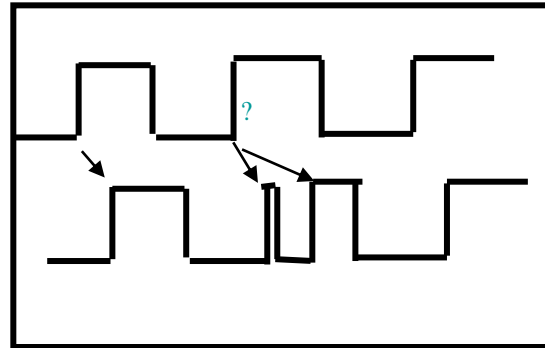
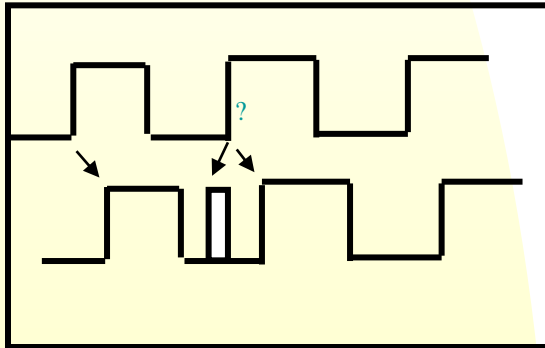
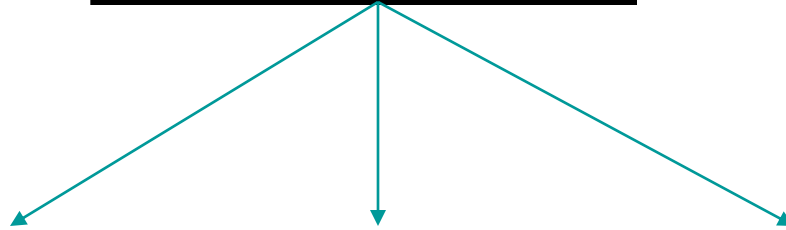
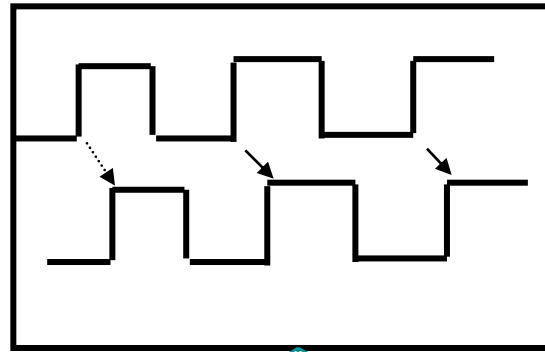
$$\nabla \mathbf{f}^B = 2\mathbf{J}(\mathbf{f}) - 2\mathbf{J}(\mathbf{f})$$

$$V_B = \frac{L_{sensor}}{\Delta t_B}$$

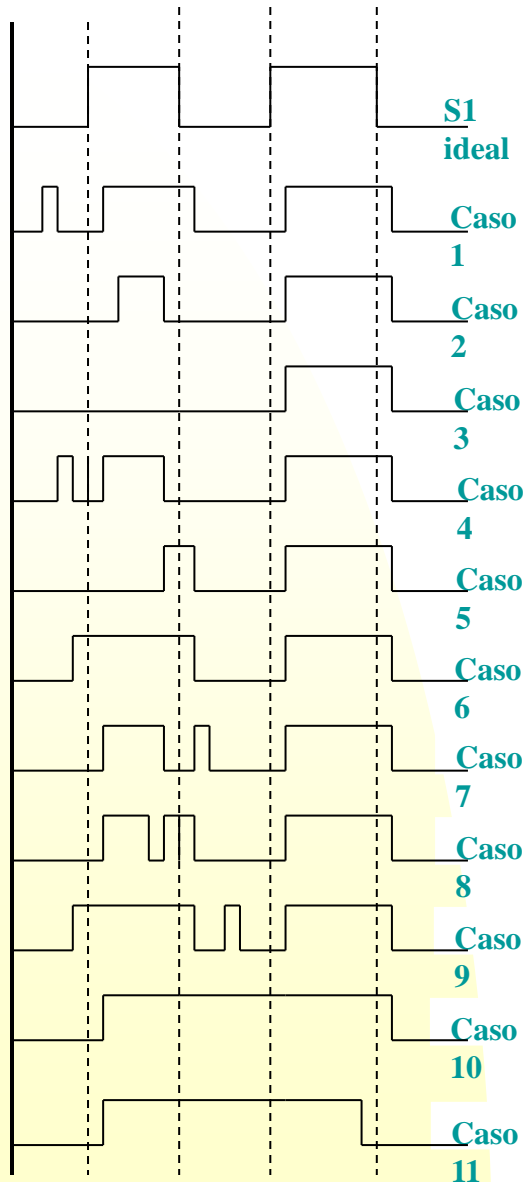
$$L_B = V_B \cdot tb$$

$$L_S = V_S \cdot ts$$

Identificação das Celulas Correspondentes

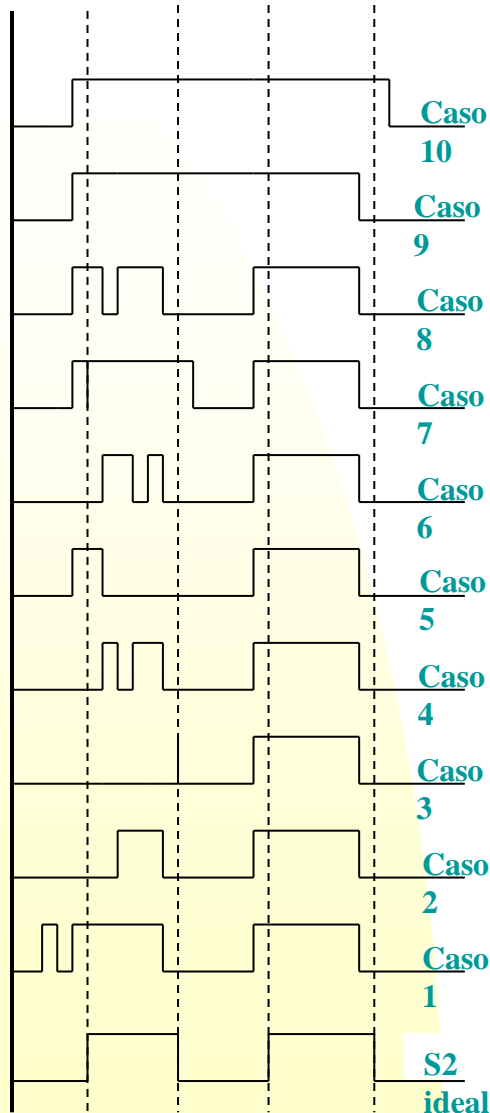


a) Sonda 1 como sonda ideal



- caso 1: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
- caso 2: $T_{1,1} < T_{2,1}$ e $S_{1,1} > S_{2,1} \rightarrow$ rejeita cbp 1,1 e 2,1
- caso 3: $T_{1,1} < T_{2,1}$ e $S_{1,1} < T_{2,1} \rightarrow$ rejeita cbp 1,1
- caso 4: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
 $T_{1,1} < T_{2,2}$ e $S_{1,1} > S_{2,2} \rightarrow$ rejeita cbp 1,1 e 2,2
- caso 5: **Condição Temporal (CT)**
 &
 essa condição retira o **cbp** que tiver o menor **tb** ou **ts**.
- caso 6: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
 $S_{1,1} < S_{2,1} \rightarrow$ rejeita cbp 1,1
- caso 7: $T_{1,1} < T_{2,1}$
 $S_{1,1} > S_{2,1} \rightarrow$ rejeita cbp 2,1
- caso 8: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
- caso 9: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
 $S_{1,1} < T_{2,1} \rightarrow$ rejeita cbp 1,1 e 2,2
- caso 10: $T_{1,1} < T_{2,1}$ e $T_{1,2} < S_{2,1} \rightarrow$ rejeita cbp 1,1 e 2,2
 $T_{1,2} < T_{2,1} \rightarrow$ rejeita cbp 1,2
- caso 11: $T_{1,1} < T_{2,1}$ e $T_{1,2} < S_{2,1} \rightarrow$ rejeita cbp 1,1 e 2,2

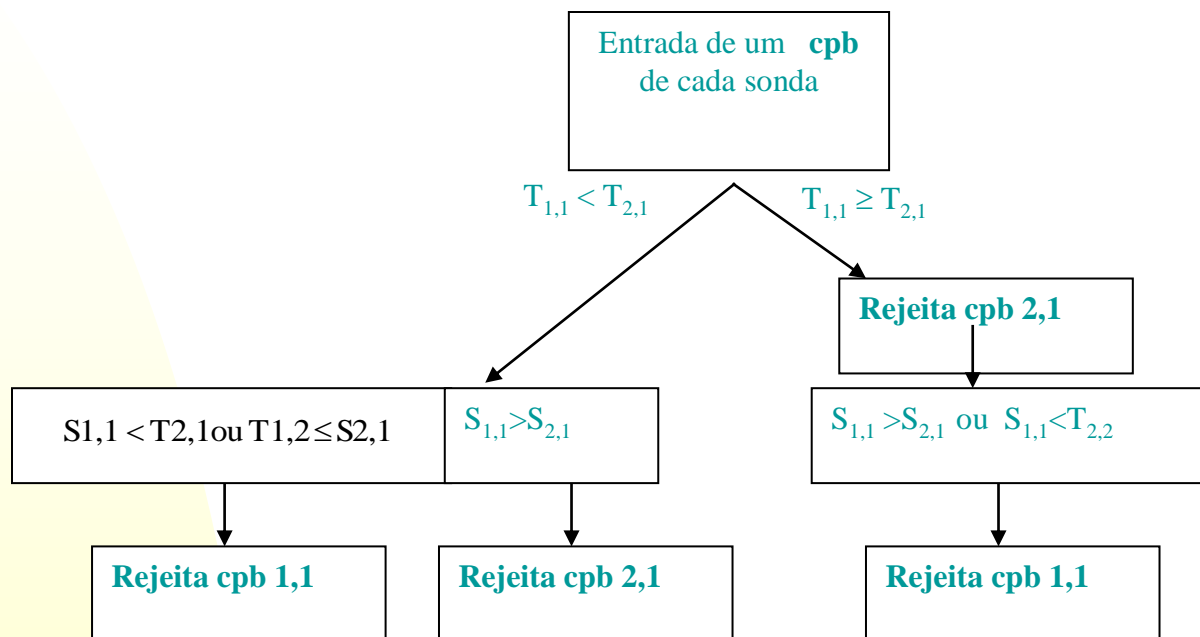
b) Sonda 2 como sonda ideal



caso 1: $T_{1,1} < T_{2,1}$ e
 $S_{1,1} < T_{2,2} \rightarrow$ Rejeita cbp 1,1
 $CT \rightarrow$ rejeita cbp 2,1 e 1,2

- caso 2: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
 $S_{1,1} < T_{2,2} \rightarrow$ rejeita cbp 1,1
- caso 3: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
- caso 4: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
 $S_{1,1} < T_{2,2} \rightarrow$ rejeita cbp 1,1
 $T_{1,2} < T_{2,2}$ e
 $S_{1,2} < T_{2,2} \rightarrow$ rejeita cbp 1,1
- caso 5: $CT \rightarrow$ rejeita cbp 1,1
- caso 6: $T_{1,1} > T_{2,1} \rightarrow$ rejeita cbp 2,1
 $T_{1,1} < T_{2,2}$ e
 $S_{1,1} < T_{2,2} \rightarrow$ rejeita cbp 1,1
 $T_{1,2} < T_{2,2}$ e
 $S_{1,2} < T_{2,2} \rightarrow$ rejeita cbp 1,2
- caso 7: $T_{1,1} < T_{2,1}$ e
 $S_{1,1} > S_{2,1} \rightarrow$ rejeita cbp 1,1 e 2,1
- caso 8: $T_{1,1} < T_{2,1}$ e
 $T_{1,2} < S_{2,1} \rightarrow$ rejeita cbp 1,1, 2,1 e 1,2
- caso 9: $T_{1,1} < T_{2,1}$ e
 $S_{1,1} > S_{2,1} \rightarrow$ rejeita cbp 2,1
- caso 10: $T_{1,1} < T_{2,1}$ e
 $S_{1,1} < S_{2,1} \rightarrow$ rejeita cbp 2,1
 $S_{1,1} > S_{2,2} \rightarrow$ rejeita cbp 1,1 e 2,2

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Condição Temporal

■ K=1

$$t = \frac{d}{(1,25.J).k}$$

Estação	L/D	(m/s) Vb	(m/s) Vs	(m/s) DVbs	(L/D) LB	(L/D) LS	(seg) T	(mbar abs) P	(---) H/D	(---) Eb	(m/s) Vcr	(# bolhas) Nb1	(# bolhas) Nb2
1.00E+00	1.27E+02	1.21E+00	1.11E+00	1.03E-01	2.90E+01	1.37E+01	9.42E-01	1.10E+03	4.04E-01	6.23E-01	1.74E+00	1.81E+02	1.01E+02
2.00E+00	2.65E+02	1.21E+00	1.13E+00	8.28E-02	3.85E+01	1.36E+01	1.14E+00	1.09E+03	5.87E-01	3.93E-01	1.32E+00	1.36E+02	1.03E+02
3.00E+00	4.95E+02	1.19E+00	1.22E+00	-2.90E-02	5.00E+01	1.14E+01	1.33E+00	1.07E+03	5.89E-01	3.88E-01	1.42E+00	1.38E+02	1.02E+02
4.00E+00	7.77E+02	6.55E+04	6.55E+04	6.55E+04	6.55E+04	6.55E+04	6.55E+04	6.55E+04	6.55E+04	6.55E+04	1.46E+00	1.54E+02	1.02E+02

(# bolhas) Nb3	(seg) Taq	(Hz) F	(---) Sb/Vb	(---) Ss/Vs	(---) Slb/Lb	(---) SlS/LS	(cm/s) JL	(cm/s) JG	(cm/s) J	(---) Jg/J	(---) JG/JL	(---) Fr	(---) Re
6.00E+00	1.20E+02	1.06E+00	1.20E-02	8.97E-02	5.38E-01	2.59E-01	3.20E+01	5.76E+01	8.96E+01	6.43E-01	1.80E+00	1.77E+00	1.09E+03
4.00E+00	1.20E+02	8.80E-01	1.64E-02	8.44E-03	3.39E-01	2.01E-01	3.20E+01	5.80E+01	9.00E+01	6.44E-01	1.81E+00	1.78E+00	1.09E+03
1.00E+00	1.20E+02	7.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.20E+01	5.95E+01	9.15E+01	6.50E-01	1.86E+00	1.81E+00	1.11E+03
0.00E+00	1.20E+02	6.55E+04	6.55E+04	6.55E+04	6.55E+04	6.55E+04	3.20E+01	6.55E+04	6.55E+04	6.55E+04	6.55E+04	6.55E+04	6.55E+04

■ K=3

$$f = A.t + B$$

Estação	L/D	(m/s) Vb	(m/s) Vs	(m/s) DVbs	(L/D) LB	(L/D) LS	(seg) T	(mbar abs) P	(---) H/D	(---) Eb	(m/s) Vcr	(# bolhas) Nb1	(# bolhas) Nb2
1.00E+00	1.27E+02	1.26E+00	1.32E+00	-6.29E-02	4.18E+01	1.69E+01	1.20E+00	1.10E+03	3.85E-01	6.46E-01	1.74E+00	1.81E+02	1.04E+02
2.00E+00	2.65E+02	1.26E+00	1.42E+00	-1.59E-01	4.18E+01	1.77E+01	1.19E+00	1.09E+03	5.98E-01	3.80E-01	1.32E+00	1.36E+02	1.03E+02
3.00E+00	4.95E+02	1.30E+00	1.46E+00	-1.61E-01	4.33E+01	1.80E+01	1.19E+00	1.06E+03	6.20E-01	3.50E-01	1.42E+00	1.38E+02	1.02E+02
4.00E+00	7.77E+02	1.31E+00	1.45E+00	-1.36E-01	4.49E+01	1.71E+01	1.20E+00	1.01E+03	5.87E-01	3.94E-01	1.46E+00	1.54E+02	1.03E+02

(# bolhas) Nb3	(seg) Taq	(Hz) F	(---) Sb/Vb	(---) Ss/Vs	(---) Slb/Lb	(---) SlS/LS	(cm/s) JL	(cm/s) JG	(cm/s) J	(---) Jg/J	(---) JG/JL	(---) Fr	(---) Re
9.80E+01	1.20E+02	8.37E-01	3.67E-02	1.72E-01	3.29E-01	2.93E-01	3.20E+01	5.77E+01	8.97E+01	6.43E-01	1.80E+00	1.78E+00	1.09E+03
1.00E+02	1.20E+02	8.42E-01	3.12E-02	1.16E-01	3.40E-01	2.44E-01	3.20E+01	5.80E+01	9.00E+01	6.45E-01	1.81E+00	1.78E+00	1.09E+03
1.00E+02	1.20E+02	8.43E-01	3.38E-02	2.00E-01	3.50E-01	2.92E-01	3.20E+01	5.96E+01	9.16E+01	6.51E-01	1.86E+00	1.81E+00	1.11E+03
9.90E+01	1.20E+02	8.36E-01	3.58E-02	1.12E-01	3.40E-01	2.09E-01	3.20E+01	6.29E+01	9.49E+01	6.63E-01	1.97E+00	1.88E+00	1.15E+03

Arquivo SLG

unidade variável	s	s	s	s	s	s	s	s	s	s	m/s	m/s	L/D	L/D	s	sequência	mBar(abs)	---	---
	tb1	ts1	tb2	ts2	T1	S1	T2	S2	DT1	DT2	VB	VS	LB	LS	T	SEQ	P	hf/D(1)	aB(1)
1.00E+00	6.32E-01	4.15E-01	6.32E-01	4.12E-01	1.09E+00	1.50E+00	1.13E+00	1.54E+00	3.90E-02	4.23E-02	1.28E+00	1.18E+00	3.11E+01	1.89E+01	1.05E+00	0.00E+00	1.10E+03	4.06E-01	6.20E-01
2.00E+00	5.24E-01	3.27E-01	5.32E-01	3.24E-01	2.14E+00	2.46E+00	2.17E+00	2.50E+00	3.73E-02	3.97E-02	1.34E+00	1.26E+00	2.70E+01	1.58E+01	8.51E-01	1.00E+00	1.10E+03	3.82E-01	6.51E-01
3.00E+00	5.47E-01	2.25E-01	5.38E-01	2.21E-01	2.99E+00	3.21E+00	3.03E+00	3.25E+00	4.13E-02	4.53E-02	1.21E+00	1.10E+00	2.54E+01	9.56E+00	7.72E-01	1.00E+00	1.11E+03	3.84E-01	6.47E-01
4.00E+00	1.05E+00	2.27E-01	1.06E+00	2.35E-01	3.76E+00	3.98E+00	3.79E+00	4.02E+00	4.03E-02	3.23E-02	1.24E+00	1.55E+00	5.01E+01	1.35E+01	1.28E+00	1.00E+00	1.11E+03	3.55E-01	6.82E-01

s	s	s	s	s	s	s	s	s	s	m/s	m/s	L/D	L/D	s	sequência	mBar(abs)	---	---
tb1	ts1	tb2	ts2	T1	S1	T2	S2	DT1	DT2	VB	VS	LB	LS	T	SEQ	P	hf/D(2)	aB(2)
9.04E-01	2.29E-01	9.02E-01	2.35E-01	6.50E-02	2.94E-01	9.80E-02	3.33E-01	3.93E-02	3.30E-02	1.27E+00	1.52E+00	4.42E+01	1.33E+01	1.13E+00	0.00E+00	1.10E+03	5.68E-01	4.15E-01
2.24E-01	2.70E-01	2.19E-01	2.74E-01	1.20E+00	1.47E+00	1.23E+00	1.51E+00	4.17E-02	3.70E-02	1.20E+00	1.35E+00	1.03E+01	1.40E+01	4.94E-01	1.00E+00	1.10E+03	6.45E-01	3.27E-01
9.94E-01	2.03E-01	9.87E-01	2.09E-01	1.69E+00	1.89E+00	1.73E+00	1.94E+00	4.20E-02	3.63E-02	1.19E+00	1.38E+00	4.55E+01	1.08E+01	1.20E+00	1.00E+00	1.10E+03	5.70E-01	4.13E-01
1.12E+00	2.73E-01	1.12E+00	2.76E-01	2.89E+00	3.16E+00	2.92E+00	3.20E+00	3.80E-02	3.47E-02	1.32E+00	1.44E+00	5.67E+01	1.51E+01	1.39E+00	1.00E+00	1.10E+03	5.46E-01	4.43E-01

s	s	s	s	s	s	s	s	s	s	m/s	m/s	L/D	L/D	s	sequência	mBar(abs)	---	---
tb1	ts1	tb2	ts2	T1	S1	T2	S2	DT1	DT2	VB	VS	LB	LS	T	SEQ	P	hf/D(3)	aB(3)
6.88E-01	3.21E-01	6.82E-01	3.02E-01	1.38E+00	1.70E+00	1.44E+00	1.74E+00	3.87E-02	5.77E-02	1.29E+00	8.67E-01	3.42E+01	1.07E+01	1.01E+00	0.00E+00	1.07E+03	6.30E-01	3.38E-01
5.03E-01	2.77E-01	4.92E-01	2.83E-01	2.39E+00	2.66E+00	2.42E+00	2.70E+00	3.90E-02	3.23E-02	1.28E+00	1.55E+00	2.48E+01	1.65E+01	7.80E-01	1.00E+00	1.07E+03	6.32E-01	3.36E-01
1.21E+00	3.38E-01	1.21E+00	3.49E-01	3.17E+00	3.51E+00	3.19E+00	3.54E+00	3.80E-02	2.77E-02	1.32E+00	1.81E+00	6.12E+01	2.35E+01	1.55E+00	1.00E+00	1.07E+03	6.02E-01	3.72E-01
2.13E-01	2.75E-01	2.02E-01	2.77E-01	4.71E+00	4.99E+00	4.75E+00	5.03E+00	3.93E-02	3.77E-02	1.27E+00	1.33E+00	1.04E+01	1.41E+01	4.88E-01	1.00E+00	1.06E+03	6.77E-01	2.83E-01

s	s	s	s	s	s	s	s	s	s	m/s	m/s	L/D	L/D	s	sequência	mBar(abs)	---	---
tb1	ts1	tb2	ts2	T1	S1	T2	S2	DT1	DT2	VB	VS	LB	LS	T	SEQ	P	hf/D(4)	aB(4)
1.01E+00	2.77E-01	1.01E+00	2.82E-01	2.56E-01	5.33E-01	2.89E-01	5.71E-01	3.83E-02	3.33E-02	1.30E+00	1.50E+00	5.08E+01	1.60E+01	1.29E+00	0.00E+00	1.01E+03	0.580654	0.40097
1.01E+00	3.11E-01	1.01E+00	3.17E-01	1.54E+00	1.86E+00	1.58E+00	1.89E+00	3.87E-02	3.23E-02	1.29E+00	1.55E+00	5.02E+01	1.85E+01	1.32E+00	1.00E+00	1.01E+03	0.575463	0.406885
1.08E+00	2.86E-01	1.08E+00	2.93E-01	2.87E+00	3.15E+00	2.90E+00	3.19E+00	4.33E-02	3.57E-02	1.15E+00	1.40E+00	4.80E+01	1.54E+01	1.37E+00	1.00E+00	1.01E+03	0.541591	0.449322
5.53E-01	2.72E-01	5.60E-01	2.70E-01	4.23E+00	4.50E+00	4.27E+00	4.54E+00	3.60E-02	3.83E-02	1.39E+00	1.30E+00	2.96E+01	1.37E+01	8.26E-01	1.00E+00	1.01E+03	0.573429	0.410652

Arquivo SGR

		(m/s)	(m/s)	(m/s)	(L/D)	(L/D)	(seg)	(mbar abs)	(---)	(---)	(m/s)	(# bolhas)	(# bolhas)
Estação	L/D	Vb	Vs	DVbs	LB	LS	T	P	H/D	Eb	Vcr	Nb1	Nb2
1.00E+00	1.27E+02	1.26E+00	1.32E+00	-6.29E-02	4.18E+01	1.69E+01	1.20E+00	1.10E+03	3.85E-01	6.46E-01	1.74E+00	1.81E+02	1.04E+02
2.00E+00	2.65E+02	1.26E+00	1.42E+00	-1.59E-01	4.18E+01	1.77E+01	1.19E+00	1.09E+03	5.98E-01	3.80E-01	1.32E+00	1.36E+02	1.03E+02
3.00E+00	4.95E+02	1.30E+00	1.46E+00	-1.61E-01	4.33E+01	1.80E+01	1.19E+00	1.06E+03	6.20E-01	3.50E-01	1.42E+00	1.38E+02	1.02E+02
4.00E+00	7.77E+02	1.31E+00	1.45E+00	-1.36E-01	4.49E+01	1.71E+01	1.20E+00	1.01E+03	5.87E-01	3.94E-01	1.46E+00	1.54E+02	1.03E+02

(# bolhas)	(seg)	(Hz)	(---)	(---)	(---)	(---)	(cm/s)	(cm/s)	(cm/s)	(---)	(---)	(---)	(---)
Nb3	Taq	F	Sb/Vb	Ss/Vs	Slb/Lb	SlS/LS	JL	JG	J	Jg/J	JG/JL	Fr	Re
9.80E+01	1.20E+02	8.37E-01	3.67E-02	1.72E-01	3.29E-01	2.93E-01	3.20E+01	5.77E+01	8.97E+01	6.43E-01	1.80E+00	1.78E+00	1.09E+03
1.00E+02	1.20E+02	8.42E-01	3.12E-02	1.16E-01	3.40E-01	2.44E-01	3.20E+01	5.80E+01	9.00E+01	6.45E-01	1.81E+00	1.78E+00	1.09E+03
1.00E+02	1.20E+02	8.43E-01	3.38E-02	2.00E-01	3.50E-01	2.92E-01	3.20E+01	5.96E+01	9.16E+01	6.51E-01	1.86E+00	1.81E+00	1.11E+03

(cm/s)	(cm/s)	(mbar/m)	(bolha/bolha/D)
JL cell	JG cell	GP	R
6.90E+01	5.88E+01	-1.68E+00	6.98E-03
9.55E+01	3.48E+01	-4.85E+00	4.26E-03
1.01E+02	3.33E+01	-7.60E+00	-3.45E-03

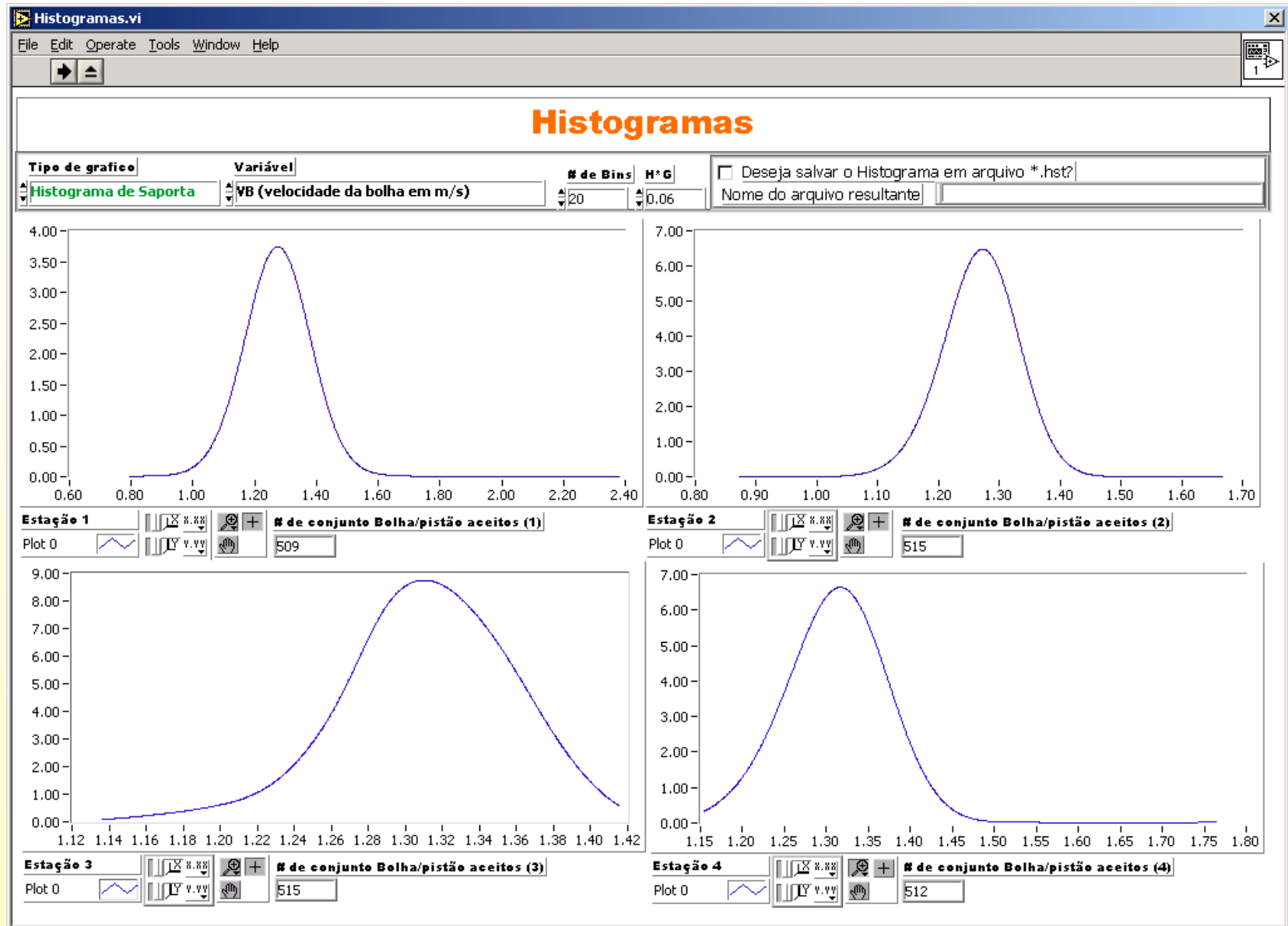
Tabela SMD

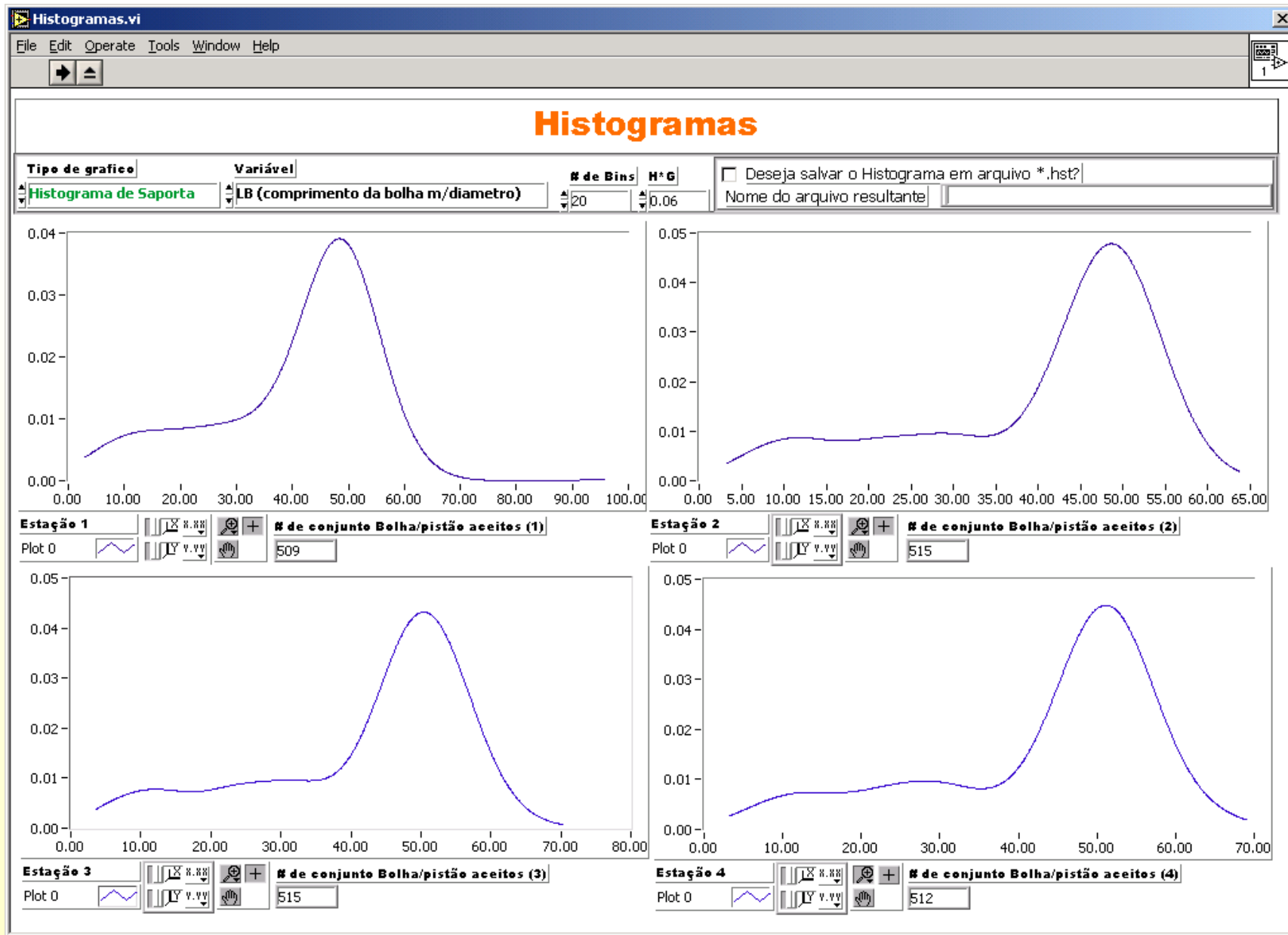
		m/s	m/s	m/s	L/D	L/D	s	mBar(abs)	---	---	m/s cross corr	#bolhas f corte	# bolhas f pré	# bolhas aceitas	s	taxa coalesc. bolhas/bolhas/D
índices	Estações	VB	VS	DVbs	LB	LS	T	P	h/D	αB	Vcr	Nb1	Nb2	Nb3	Tt	R
k=3																
Valores medios	1	1.262E+00	1.325E+00	-6.287E-02	4.182E+01	1.691E+01	1.195E+00	1.100E+03	3.8517E-01	6.4590E-01	1.744E+00	1.810E+02	1.040E+02	9.800E+01	1.2000E+02	6.978E-03
	2	1.259E+00	1.418E+00	-1.586E-01	4.177E+01	1.773E+01	1.187E+00	1.094E+03	5.9769E-01	3.8026E-01	1.316E+00	1.360E+02	1.030E+02	1.000E+02	1.2000E+02	4.256E-03
	3	1.297E+00	1.458E+00	-1.614E-01	4.333E+01	1.800E+01	1.186E+00	1.065E+03	6.1988E-01	3.5045E-01	1.415E+00	1.380E+02	1.020E+02	1.000E+02	1.2000E+02	-3.451E-03
	4	1.310E+00	1.446E+00	-1.363E-01	4.489E+01	1.705E+01	1.196E+00	1.009E+03	5.8672E-01	3.9438E-01	1.456E+00	1.540E+02	1.030E+02	9.900E+01	1.2000E+02	0.000E+00
Desvio Padrão	1	4.632E-02	2.283E-01	2.331E-01	1.376E+01	4.946E+00	3.051E-01	2.996E+00	3.5571E-02	4.2678E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	2	3.923E-02	1.644E-01	1.637E-01	1.420E+01	4.325E+00	3.087E-01	3.068E+00	3.7685E-02	4.3768E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	3	4.388E-02	2.912E-01	2.938E-01	1.518E+01	5.259E+00	3.096E-01	3.578E+00	2.4722E-02	2.9605E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	4	4.684E-02	1.617E-01	1.739E-01	1.525E+01	3.560E+00	3.037E-01	2.542E+00	3.3275E-02	3.8398E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
Valores Máximos	1	1.531E+00	1.899E+00	5.954E-01	6.318E+01	2.994E+01	1.727E+00	1.108E+03	6.1682E-01	6.9794E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	2	1.339E+00	1.899E+00	2.476E-01	6.369E+01	3.065E+01	1.718E+00	1.101E+03	8.0148E-01	4.4770E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	3	1.415E+00	2.885E+00	4.261E-01	7.029E+01	4.014E+01	1.670E+00	1.072E+03	7.2801E-01	4.0148E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	4	1.402E+00	1.875E+00	3.378E-01	6.896E+01	2.580E+01	1.696E+00	1.016E+03	7.9372E-01	4.4932E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
Valores Mínimos	1	1.181E+00	6.977E-01	-6.487E-01	4.111E+00	3.372E+00	4.263E-01	1.093E+03	3.4178E-01	3.6690E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	2	1.154E+00	1.034E+00	-5.944E-01	4.156E+00	9.177E+00	3.410E-01	1.088E+03	5.4253E-01	1.5404E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	3	1.190E+00	8.671E-01	-1.557E+00	4.363E+00	7.692E+00	3.303E-01	1.057E+03	5.7834E-01	2.2391E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00
	4	1.154E+00	1.014E+00	-6.145E-01	4.694E+00	9.583E+00	3.597E-01	1.005E+03	5.4159E-01	1.6221E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.0000E+00	0.000E+00

c) Pós-Processamento

- Junta SGR
- Junta SLG

Histogramas





Correlações

