RELATÓRIO TRABALHO 1 SÉRIE DE FOURIER

O trabalho foi realizado a partir do algoritmo em python "main.py" enviado junto com esse relatório. Seguem algumas considerações importantes a respeito dos coeficientes:

$$a_0 = \frac{1}{T_0}\int_{T_0} x(t)dt$$

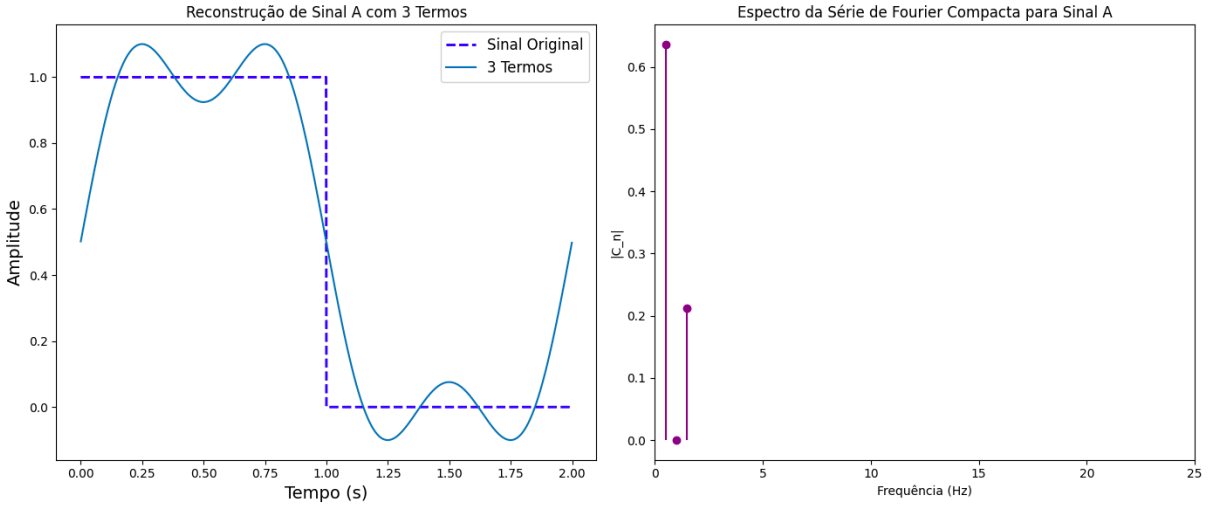
```
a0 = (2 / T) * np.sum(x_t * dt)
```

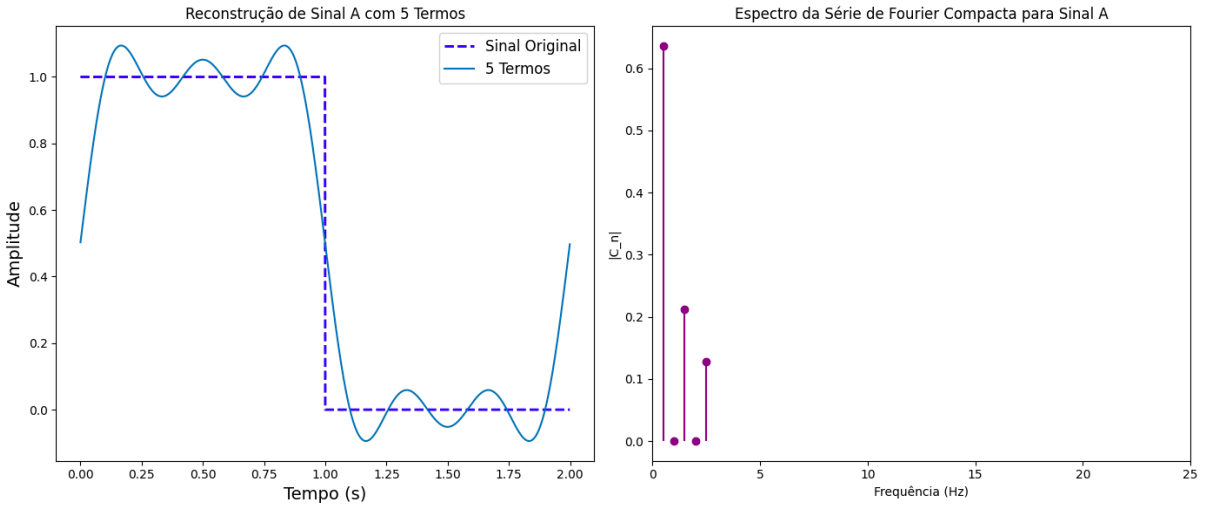
$$a_n = \frac{2}{T_0}\int_{T_0} x(t)\cos n\omega_0 t dt$$

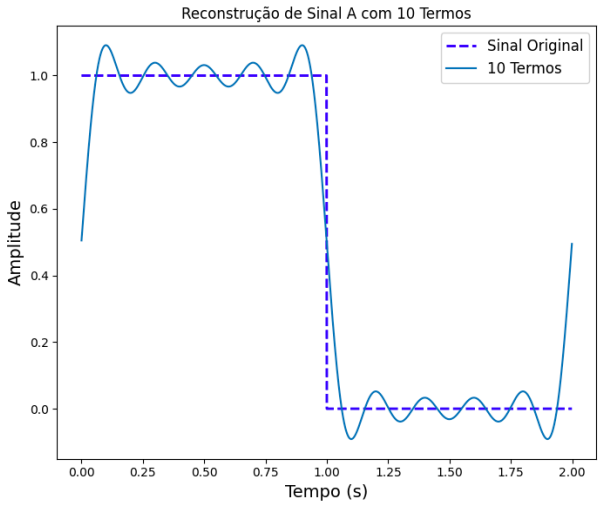
$$b_n = \frac{2}{T_0}\int_{T_0} x(t)\sin n\omega_0 t dt$$

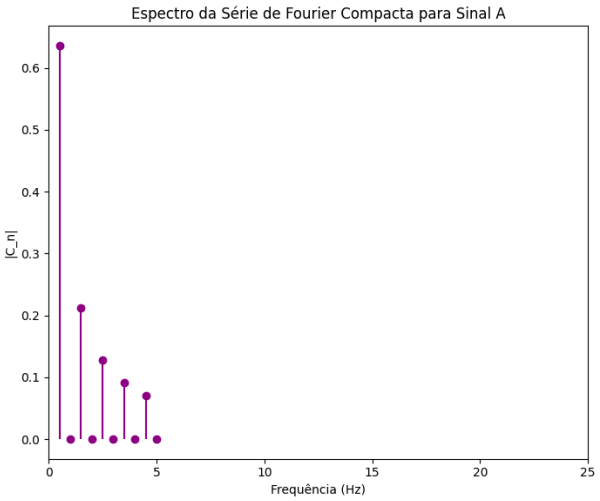
```
for n in range(1, N_termos + 1):
    cos_comp = np.cos(2 * np.pi * n * t / T)
    sin_comp = np.sin(2 * np.pi * n * t / T)
    an[n-1] = (2 / T) * np.sum(x_t * cos_comp * dt)
    bn[n-1] = (2 / T) * np.sum(x_t * sin_comp * dt)
```

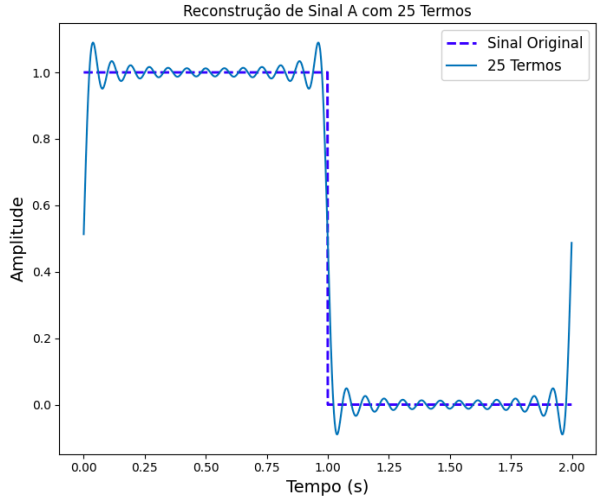
SINAL A

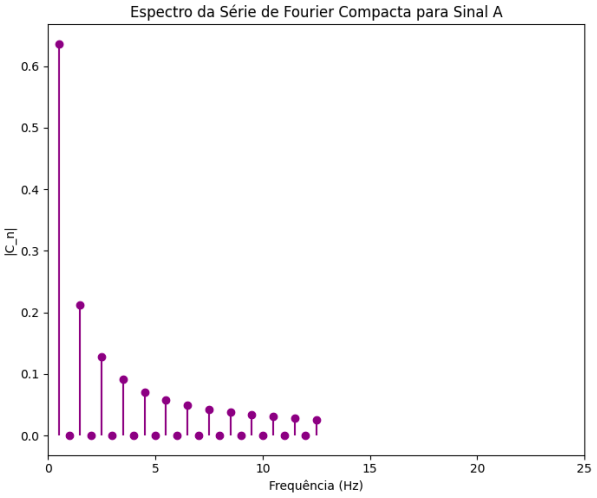


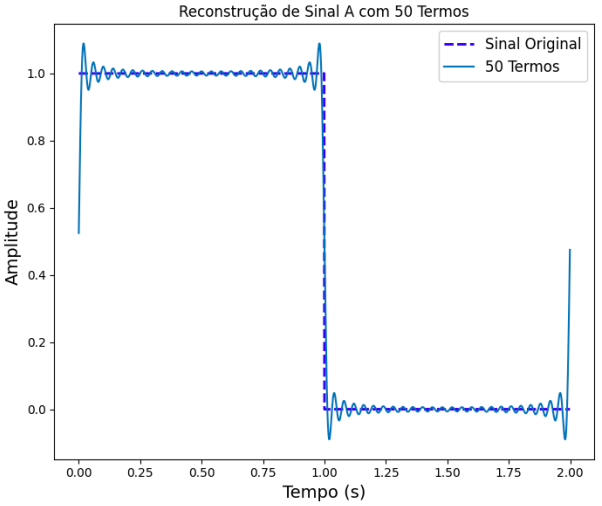



Reconstrução de Sinal A com 10 Termos
Sinal Original
10 Termos
Amplitude
Tempo (s)

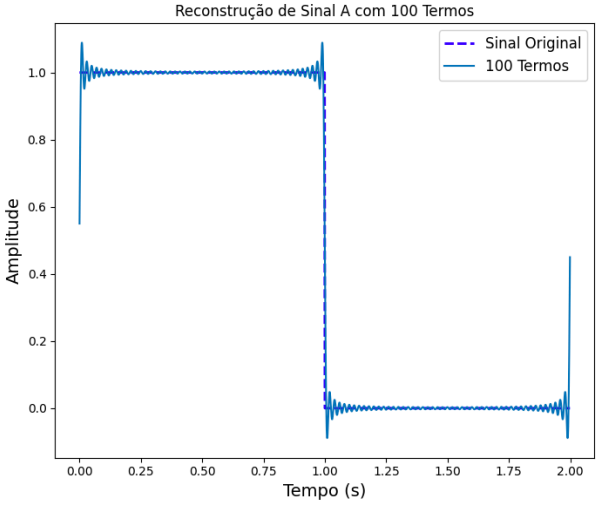

Espectro da Série de Fourier Compacta para Sinal A
|C_n|
Frequência (Hz)


Reconstrução de Sinal A com 25 Termos
Sinal Original
25 Termos
Amplitude
Tempo (s)


Espectro da Série de Fourier Compacta para Sinal A
|C_n|
Frequência (Hz)


Reconstrução de Sinal A com 50 Termos
Sinal Original
50 Termos
Amplitude
Tempo (s)


Espectro da Série de Fourier Compacta para Sinal A
|C_n|
Frequência (Hz)


Reconstrução de Sinal A com 100 Termos
Sinal Original
100 Termos
Amplitude
Tempo (s)

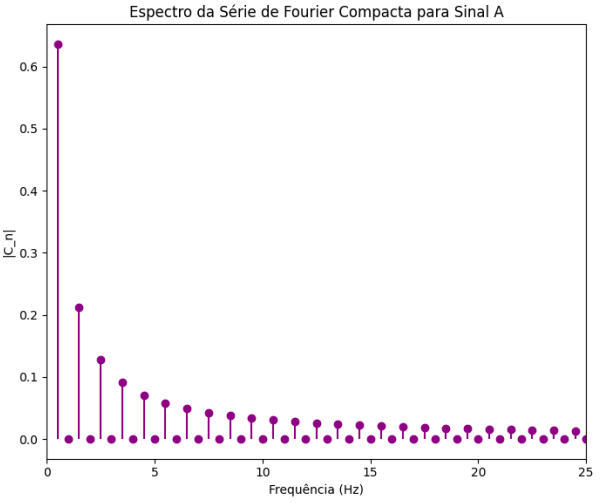
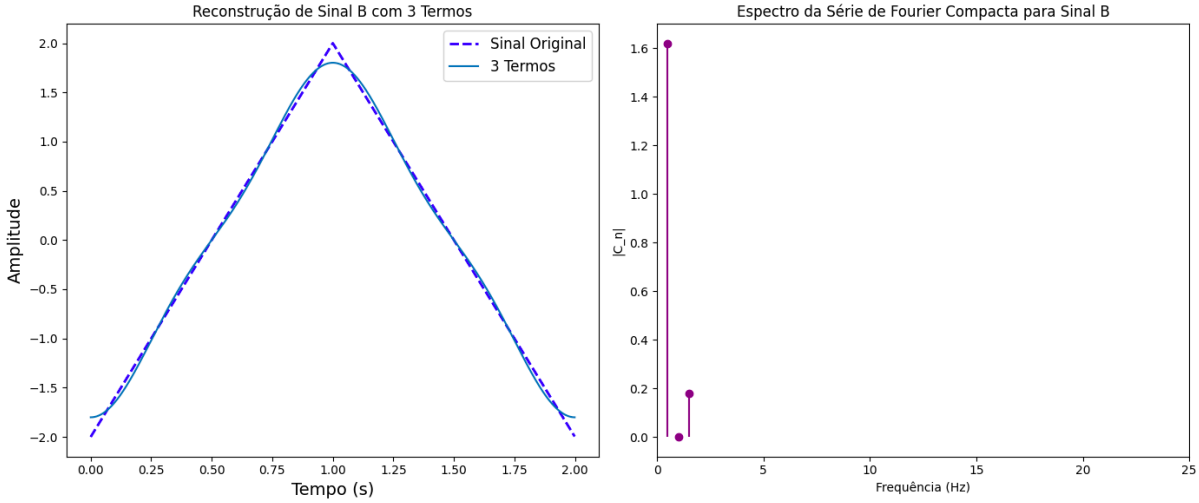
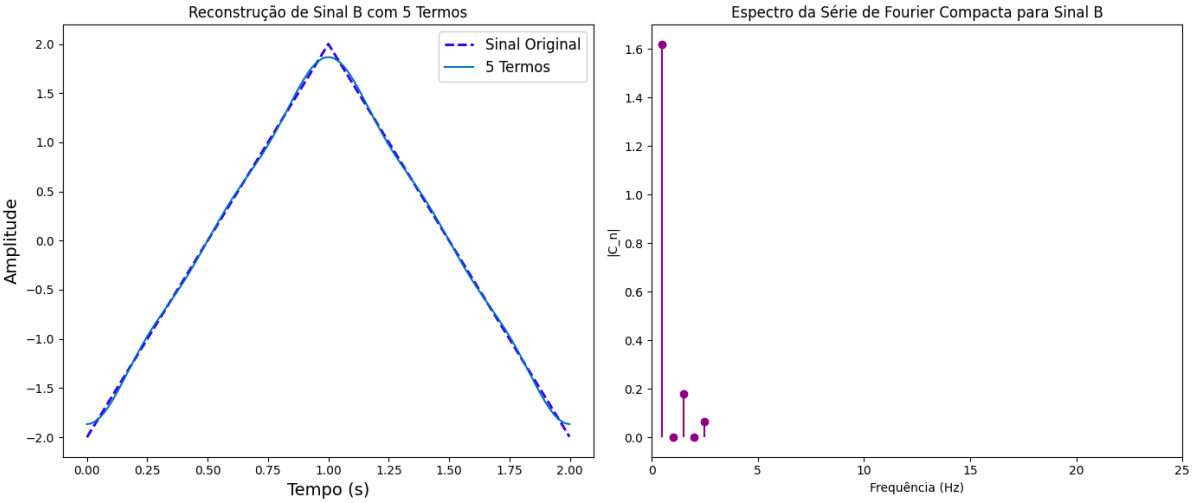

Espectro da Série de Fourier Compacta para Sinal A
|C_n|
Frequência (Hz)

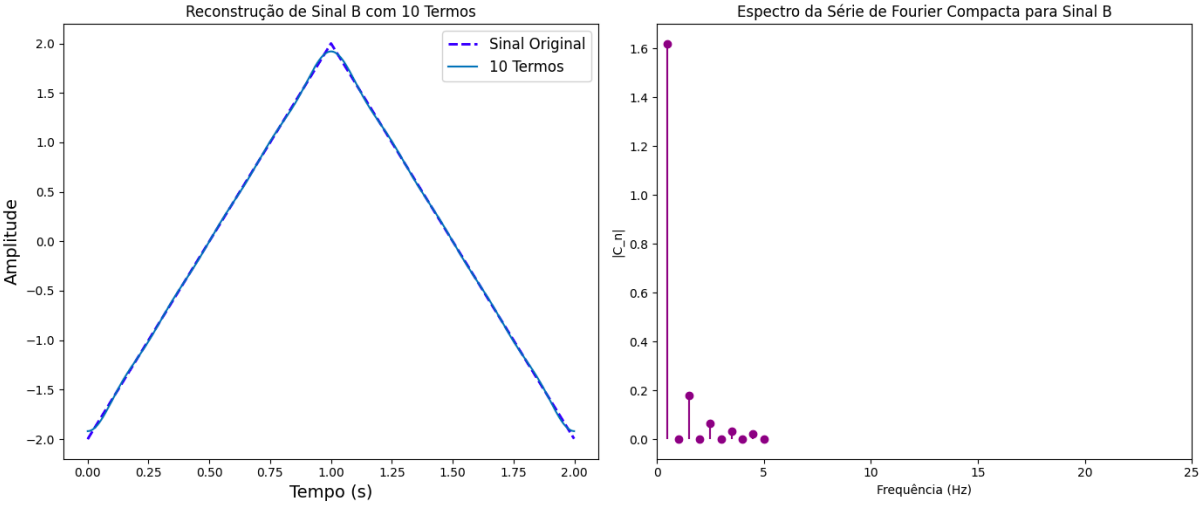
Tabela de coeficientes para Sinal A com 100 termos:

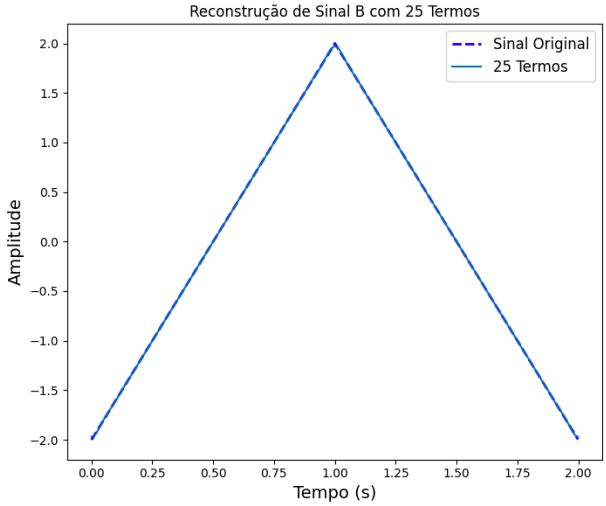
Termo (n)	a_n	b_n	C_n	θ_n (rad)
0	1	0	0.5	0
1	0.001	0.636619	0.63662	1.56923
2	0	0	0	0
3	0.001	0.212205	0.212207	1.56608
4	0	0	0	0
5	0.001	0.127321	0.127325	1.56294
6	-3.46945e-17	2.77556e-17	4.44306e-17	2.46685
7	0.001	0.090942	0.090947S	1.5598
8	-2.08167e-17	0	2.08167e-17	3.14159
9	0.001	0.0707388	0.0707379	1.55666
10	-1.04083e-17	-8.32667e-17	8.39147e-17	-1.69515
11	0.001	0.0578688	0.0578774	1.55352
12	4.51028e-17	7.63278e-17	8.86578e-17	1.03709
13	0.001	0.0489639	0.0489742	1.55038
14	1.8735e-16	-1.66533e-16	2.50666e-16	+0.726642
15	0.001	0.0424335	0.0424452	1.54723
16	-2.7929e-16	-3.36536e-16	4.37333e-16	-2.2635
17	0.001	0.0374393	0.0374527	1.54409
18	-2.11636e-16	2.22045e-16	3.06747e-16	2.3322
19	0.001	0.0334964	0.0335113	1.54095
20	-4.33681e-17	-7.63278e-17	8.7788e-17	-2.00749
21	0.001	0.0303042	0.0303207	1.53781
22	-2.46331e-16	6.245e-17	2.54124e-16	2.8933
23	0.001	0.0276671	0.0276851	1.53467
24	6.245e-17	-1.73472e-17	6.48146e-17	+0.270947
25	0.001	0.0254517	0.0254713	1.53153
26	-1.35308e-16	1.38778e-17	1.36018e-16	3.03939
27	0.001	0.0235644	0.0235856	1.52838
28	9.54098e-17	-2.18575e-16	2.38491e-16	-1.15922
29	0.001	0.0219372	0.02196	1.52524
30	-4.25087e-16	1.07553e-16	4.38405e-16	2.89373
31	0.001	0.0205199	0.0205442	1.5221
32	-1.67834e-16	2.43295e-16	2.95569e-16	2.17467
33	0.001	0.0192742	0.0193002	1.51896
34	4.29344e-16	1.35308e-16	4.50161e-16	0.305299
35	0.001	0.0181708	0.0181983	1.51582
36	-3.25261e-16	1.56125e-16	3.6079e-16	2.69407
37	0.001	0.0171866	0.0172156	1.51268
38	-2.68882e-17	8.67362e-17	9.08083e-17	1.8714
39	0.001	0.0163032	0.0163338	1.50954
40	-7.54685e-17	1.04083e-17	7.61749e-17	3.00453
41	0.001	0.0155058	0.0155381	1.50639
42	1.56125e-16	1.31839e-16	2.04344e-16	0.70126
43	0.001	0.0147826	0.0148164	1.50325
44	-3.34802e-16	1.66533e-16	3.73933e-16	2.68002
45	0.001	0.0141235	0.0141589	1.50011
46	1.23165e-16	3.59088e-16	3.79623e-16	1.24038
47	0.001	0.0135205	0.0135574	1.49697
48	5.01769e-16	-2.05348e-16	5.42162e-16	-0.388453
49	0.001	0.0129666	0.0130051	1.49383
50	2.08167e-17	-5.55112e-17	5.92859e-17	-1.21203
51	0.001	0.012456	0.0124961	1.49069
52	1.41814e-16	1.21431e-17	1.42333e-16	0.8854186
53	0.001	0.0119839	0.0120256	1.48754
54	-6.93889e-17	1.07553e-16	1.27994e-16	2.14376
55	0.001	0.0115461	0.0115893	1.4844
56	9.97466e-17	-9.5193e-17	1.37881e-16	-0.762043
57	0.001	0.0111389	0.0111837	1.48126
58	1.31839e-16	5.89806e-17	1.44431e-16	0.420663
59	0.001	0.0107593	0.0108056	1.47812
60	-5.33427e-17	2.37657e-16	2.4357e-16	1.79159
61	0.001	0.0104044	0.0104524	1.47498
62	7.80626e-17	-4.31946e-16	4.38943e-16	-1.392
63	0.001	0.0100721	0.0101216	1.47184
64	-4.81819e-16	-4.81386e-17	4.84218e-16	-3.04201
65	0.001	0.00976009	0.00981119	1.46869
66	-2.14238e-16	-2.14238e-16	3.02979e-16	-2.35619
67	0.001	0.00946668	0.00951935	1.46555
68	7.89299e-17	-4.72712e-17	9.20027e-17	-0.539611
69	0.001	0.00919022	0.00924446	1.46241
70	-1.52656e-16	6.59195e-17	1.6628e-16	2.73396
71	0.001	0.00892927	0.00898509	1.45927
72	-3.20924e-16	-1.34441e-17	3.21205e-16	-3.09973
73	0.001	0.00868256	0.00873996	1.45613
74	-1.04083e-16	-1.32706e-16	1.68654e-16	-2.2359
75	0.001	0.00844896	0.00850793	1.45299
75	0.001	0.00844896	0.00850793	1.45299
76	-1.14058e-16	-1.98626e-16	2.29045e-16	-2.09206
77	0.001	0.00822743	0.00828798	1.44985
78	-5.02202e-16	9.45424e-17	5.11024e-16	2.95551
79	0.001	0.00801707	0.0080792	1.4467
80	-1.64799e-17	2.71484e-16	2.71984e-16	1.63142
81	0.001	0.00781705	0.00788075	1.44356
82	-1.06685e-16	5.29091e-17	1.19085e-16	2.6812
83	0.001	0.00762661	0.00769189	1.44042
84	1.04083e-16	2.14238e-16	2.38104e-16	1.11855
85	0.001	0.00744589	0.00751194	1.43728
86	-4.16334e-17	4.0766e-17	5.82604e-17	2.36672
87	0.001	0.00727186	0.00734029	1.43414
88	-3.25261e-16	1.09952e-16	3.76665e-16	2.61382
89	0.001	0.00710637	0.00717638	1.431
90	-4.77049e-17	-1.13624e-16	1.23233e-16	-1.96829
91	0.001	0.00694811	0.0070197	1.42785
92	-9.02056e-17	4.59702e-16	4.68468e-16	1.76456
93	0.001	0.00679661	0.00686978	1.42471
94	1.93855e-16	3.72966e-17	1.97411e-16	0.190071
95	0.001	0.00665144	0.0067262	1.42157
96	2.64979e-16	-1.96891e-16	3.30121e-16	-0.639035
97	0.001	0.00651222	0.00658855	1.41843
98	-5.76796e-17	1.05818e-16	1.20517e-16	2.06986
99	0.001	0.00637858	0.00645649	1.41529
100	1.7434e-16	-1.69136e-16	2.42902e-16	-0.770248

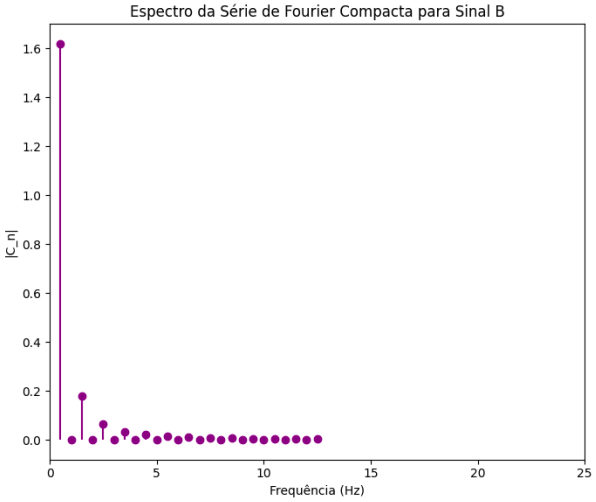
SINAL B

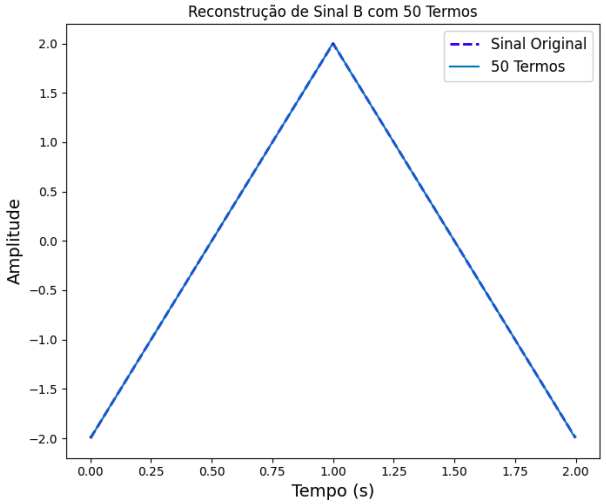












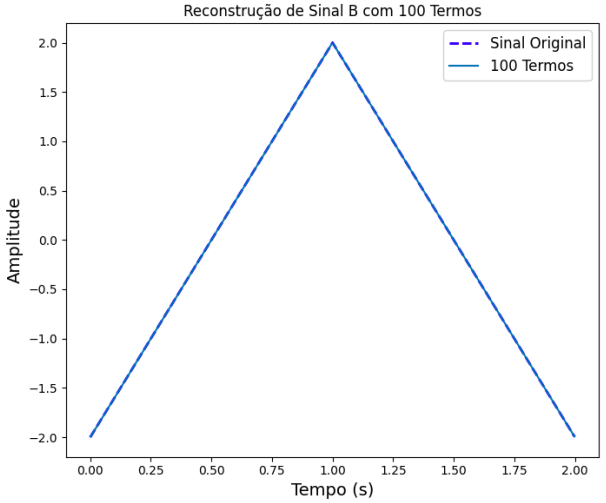
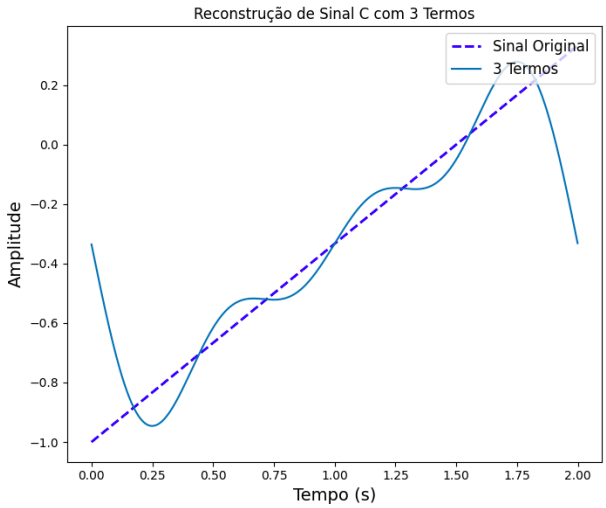
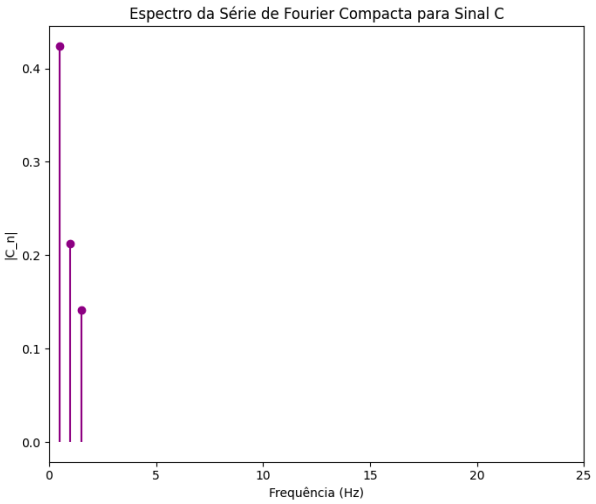


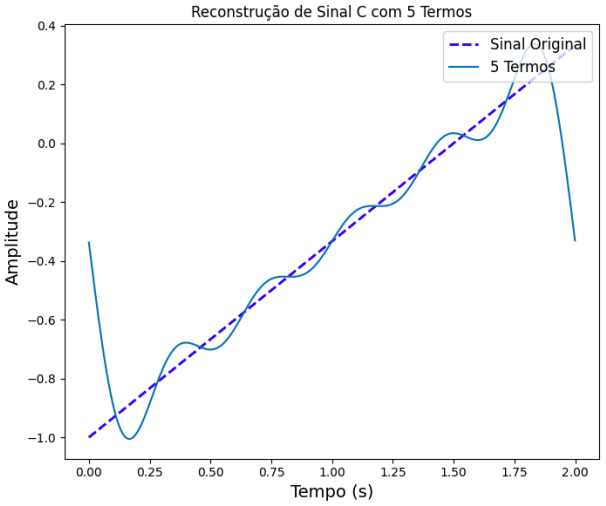
Tabela de coeficientes para Sinal B com 100 termos:

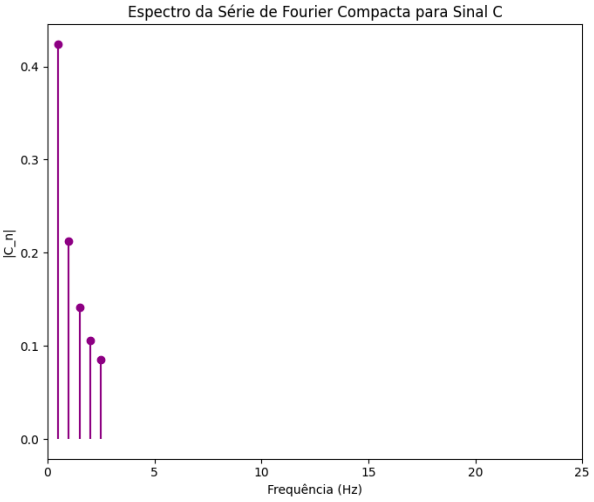
Termo (n)	a_n	b_n	C_n	θ_n (rad)
0	−5.55112e−17	0	−2.77556e−17	0
1	−1.62114	1.66533e−16	1.62114	3.14159
2	0	−1.11022e−16	1.11022e−16	−1.5708
3	−0.180128	0	0.180128	3.14159
4	1.52656e−16	0	1.52656e−16	0
5	−0.0648469	2.77556e−17	0.0648469	3.14159
6	−4.16334e−17	0	4.16334e−17	3.14159
7	−0.0330858	8.32667e−17	0.0330858	3.14159
8	1.4138e−16	−5.55112e−17	1.51887e−16	−0.374144
9	−0.0200154	2.77556e−16	0.0200154	3.14159
10	1.9082e−16	−5.55112e−17	1.9873e−16	−0.283096
11	−0.0133992	1.94289e−16	0.0133992	3.14159
12	6.45317e−16	1.66533e−16	6.66459e−16	0.252554
13	−0.00959387	2.28983e−16	0.00959387	3.14159
14	6.08012e−16	−5.55112e−17	6.82274e−16	−0.081452
15	−0.0072064	−5.55112e−17	0.0072064	−3.14159
16	3.64292e−17	−2.91434e−16	2.93702e−16	−1.44644
17	−0.00561081	−6.45317e−16	0.00561081	−3.14159
18	−5.29091e−16	−8.32667e−17	5.35603e−16	−2.9855
19	−0.00449282	−3.85311e−16	0.00449282	−3.14159
20	−4.2414e−16	2.77556e−17	4.25047e−16	3.07625
21	−0.00367739	−1.73472e−17	0.00367739	−3.14159
22	1.89085e−16	0	1.89085e−16	0
23	−0.00306587	−2.63678e−16	0.00306587	−3.14159
24	−3.81639e−16	−1.31839e−16	4.0377e−16	−2.88897
25	−0.00259516	−9.36751e−17	0.00259516	−3.14159
26	−6.74807e−16	9.71445e−17	6.81764e−16	2.99862
27	−0.00222512	−1.80614e−16	0.00222512	−3.14159
28	−3.09648e−16	1.66533e−16	3.5159e−16	2.64815
29	−0.00192897	−1.21431e−16	0.00192897	−3.14159
30	−3.88578e−16	6.93889e−16	7.95283e−16	2.00128
31	−0.00168826	−2.81025e−16	0.00168826	−3.14159
32	−1.01915e−16	1.06859e−15	1.07344e−15	1.66588
33	−0.00148998	−4.16334e−17	0.00148998	−3.14159
34	−2.22912e−16	2.63678e−16	3.45276e−16	2.27261
35	−0.00132471	−3.33067e−16	0.00132471	−3.14159
36	1.61329e−16	−6.93889e−17	1.75619e−16	−0.406189
37	−0.00118551	−1.56125e−16	0.00118551	−3.14159
38	2.63678e−16	1.52656e−16	3.0468e−16	0.524796
39	−0.00106717	−3.64292e−16	0.00106717	−3.14159
40	−8.23994e−17	2.91434e−16	3.02858e−16	1.84634
41	−0.000965724	−3.33067e−16	0.000965724	−3.14159
42	−4.11997e−16	1.73472e−17	4.12362e−16	3.09951
43	−0.0008781	−3.81639e−16	0.0008781	−3.14159
44	2.87964e−16	1.11022e−16	3.08625e−16	0.367981
45	−0.000801897	−3.62557e−16	0.000801897	−3.14159
46	−1.91687e−16	−4.51028e−17	1.96922e−16	−2.9105
47	−0.000735214	1.26635e−16	0.000735214	3.14159
48	−2.98372e−16	−6.48787e−16	7.34108e−16	−2.00185
49	−0.000676528	6.67869e−16	0.000676528	3.14159
50	−2.56305e−16	−2.81228e−16	3.25861e−16	−2.476
51	−0.00062461	5.08274e−16	0.00062461	3.14159
52	−2.84928e−16	−3.29597e−16	4.35682e−16	−2.28363
53	−0.000578458	4.63171e−16	0.000578458	3.14159
54	2.38091e−16	−2.08167e−17	2.38999e−16	−0.0872099
55	−0.000537249	2.15106e−16	0.000537249	3.14159
56	−1.27936e−16	1.00614e−16	1.6276e−16	2.47517
57	−0.000500301	1.12757e−16	0.000500301	3.14159
58	−3.47812e−16	−1.38778e−16	3.74476e−16	−2.76195
59	−0.000467046	1.56125e−17	0.000467046	3.14159
60	4.28043e−16	−1.80411e−16	4.64589e−16	−0.398885
61	−0.000437009	9.35016e−16	0.000437009	3.14159
62	4.64472e−16	−8.98587e−16	1.01153e−15	−1.09373
63	−0.000409786	1.18308e−15	0.000409786	3.14159
64	1.12757e−16	−8.95117e−16	9.02191e−16	−1.44549
65	−0.000385038	6.76542e−17	0.000385038	3.14159
66	−2.65846e−16	−1.04083e−16	2.85495e−16	−2.76842
67	−0.000362472	3.31332e−16	0.000362472	3.14159
68	−7.0343e−16	−1.45717e−16	7.18365e−16	−2.93733
69	−0.00034184	−1.21431e−17	0.00034184	−3.14159
70	−1.17961e−16	−6.03684e−16	6.15101e−16	−1.76377
71	−0.000322927	1.21431e−16	0.000322927	3.14159
72	−2.90566e−17	−3.95517e−16	3.96583e−16	−1.64413
73	−0.000305548	1.56125e−17	0.000305548	3.14159
74	−4.36717e−16	−4.51028e−17	4.3904e−16	−3.03868
75	−0.00028954	1.82146e−16	0.00028954	3.14159
76	−3.04444e−16	−4.78784e−16	5.6738e−16	−2.13717
77	−0.000274763	5.22152e−16	0.000274763	3.14159
78	−9.32414e−17	3.95517e−16	4.06359e−16	1.80231
79	−0.000261094	−1.11022e−16	0.000261094	−3.14159
80	3.01842e−16	9.88792e−16	1.03384e−15	1.27452
81	−0.000248425	−3.69496e−16	0.000248425	−3.14159
82	5.23453e−16	7.56339e−16	9.19811e−16	0.965401
83	−0.000236661	−7.63278e−17	0.000236661	−3.14159
84	−2.77989e−16	3.28924e−16	4.24582e−16	2.28463
85	−0.000225717	−3.16587e−16	0.000225717	−3.14159
86	−2.98372e−16	4.35416e−16	5.27838e−16	2.17156
87	−0.00021552	−2.92301e−16	0.00021552	−3.14159
88	3.20924e−16	−1.56125e−16	3.56885e−16	−0.452778
89	−0.000206002	2.57606e−16	0.000206002	3.14159
90	−1.43115e−17	2.498e−16	2.5021e−16	1.62803
91	−0.000197105	−5.81132e−17	0.000197105	−3.14159
92	5.44703e−16	−1.9082e−16	5.7716e−16	−0.336959
93	−0.000188776	−1.2889e−15	0.000188776	−3.14159
94	−8.14886e−16	5.27356e−16	9.70641e−16	2.56722
95	−0.000180967	1.13624e−16	0.000180967	3.14159
96	−4.05058e−16	2.74086e−16	4.89076e−16	2.5467
97	−0.000173636	−5.01335e−16	0.000173636	−3.14159
98	−1.49186e−16	−6.93889e−17	1.64534e−16	−2.70624
99	−0.000166745	2.15106e−16	0.000166745	3.14159
100	1.37043e−16	1.19696e−16	1.81956e−16	0.717933

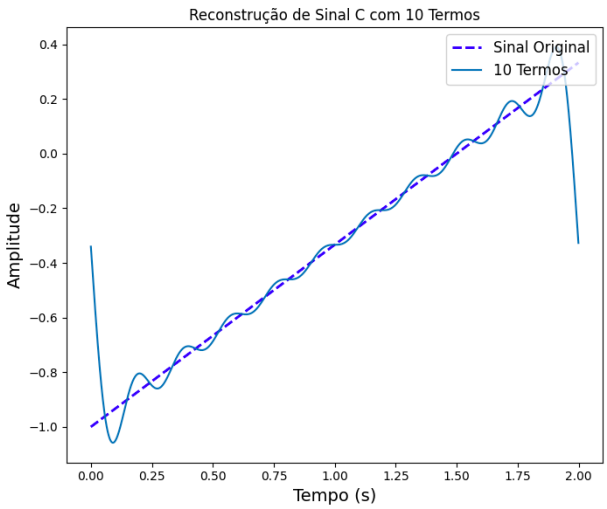
SINAL C

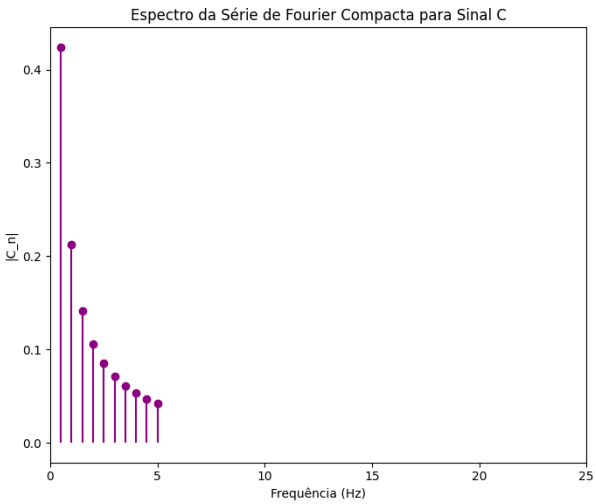

Reconstrução de Sinal C com 3 Termos
Sinal Original
3 Termos
Amplitude
Tempo (s)

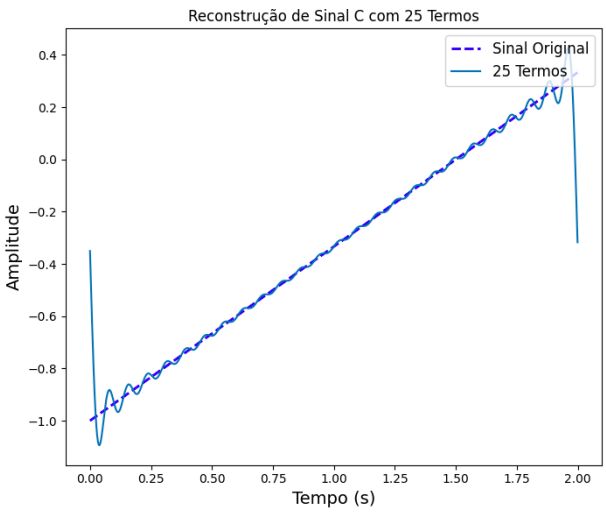

Espectro da Série de Fourier Compacta para Sinal C
|C_n|
Frequência (Hz)

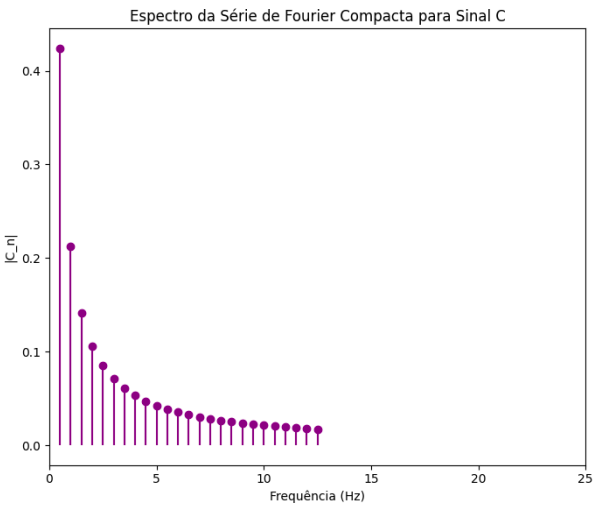

Reconstrução de Sinal C com 5 Termos
Sinal Original
5 Termos
Amplitude
Tempo (s)

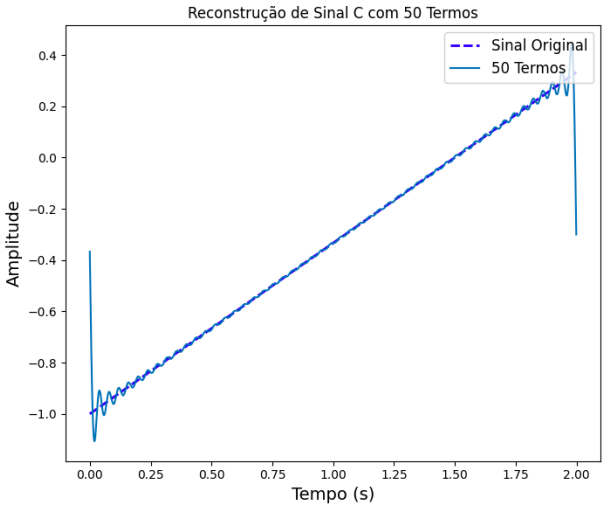

Espectro da Série de Fourier Compacta para Sinal C
|C_n|
Frequência (Hz)

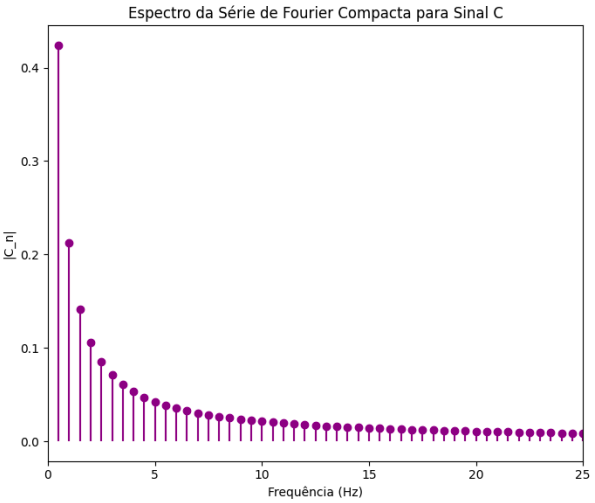

Reconstrução de Sinal C com 10 Termos
Sinal Original
10 Termos
Amplitude
Tempo (s)

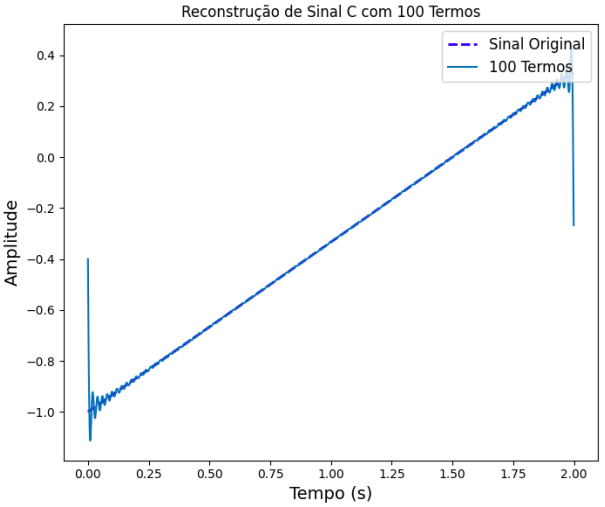

Espectro da Série de Fourier Compacta para Sinal C
|C_n|
Frequência (Hz)


Reconstrução de Sinal C com 25 Termos
Sinal Original
25 Termos
Amplitude
Tempo (s)


Espectro da Série de Fourier Compacta para Sinal C
|C_n|
Frequência (Hz)







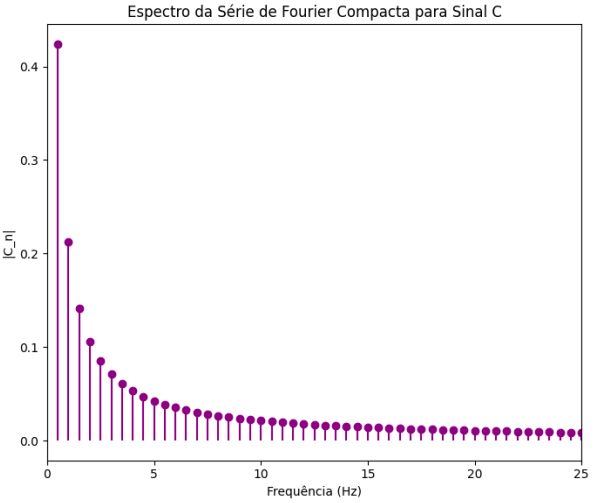
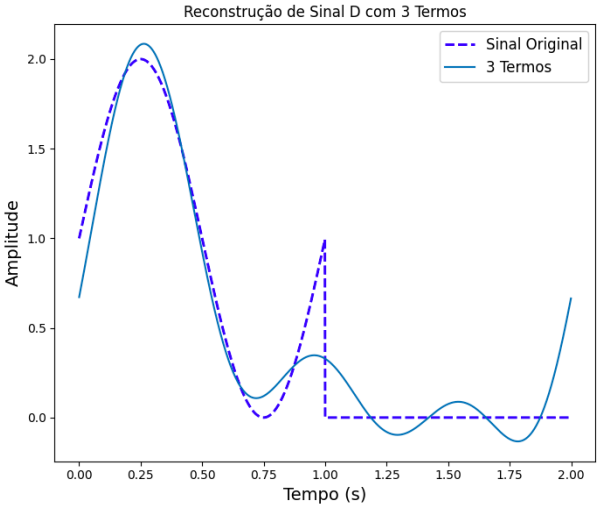
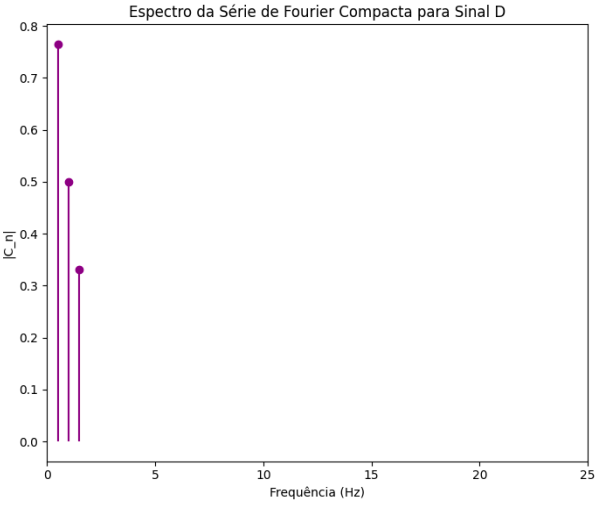


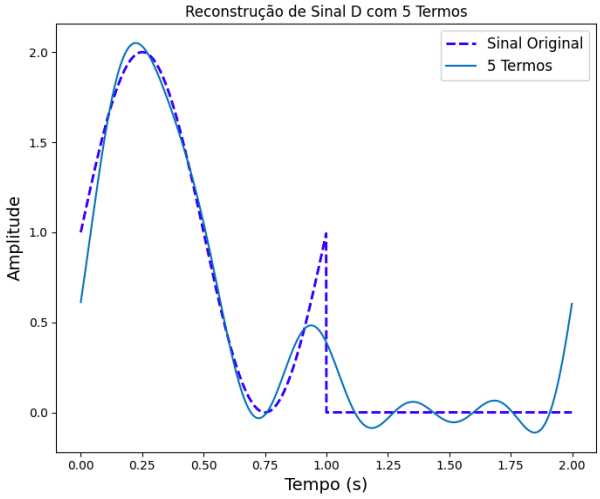
Tabela de coeficientes para Sinal C com 100 termos:

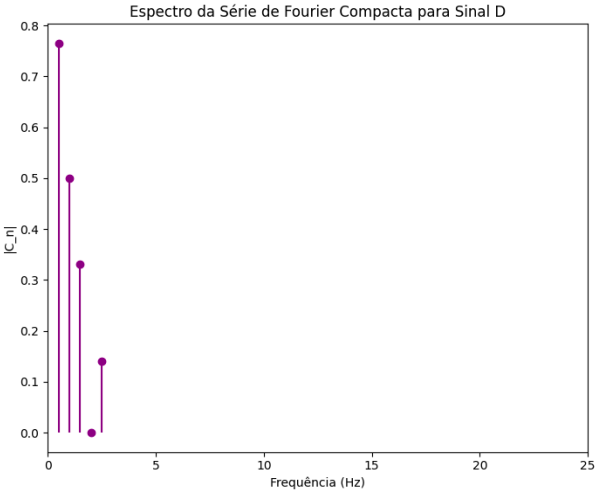
Termo (n)	a_n	b_n	C_n	θ_n (rad)
0	-0.667333	0	-0.333667	0
1	-0.000666667	-0.424413	0.424413	-1.57237
2	-0.000666667	-0.212286	0.212287	-1.57394
3	-0.000666667	-0.14147	0.141472	-1.57551
4	-0.000666667	-0.106102	0.106104	-1.57708
5	-0.000666667	-0.0848809	0.0848835	-1.57865
6	-0.000666667	-0.0707334	0.0707366	-1.58022
7	-0.000666667	-0.0606628	0.0606317	-1.58179
8	-0.000666667	-0.0530489	0.053053	-1.58336
9	-0.000666667	-0.0471539	0.0471586	-1.58493
10	-0.000666667	-0.0424378	0.0424431	-1.5865
11	-0.000666667	-0.0385792	0.0385849	-1.58808
12	-0.000666667	-0.0353636	0.0353699	-1.58965
13	-0.000666667	-0.0326426	0.0326494	-1.59122
14	-0.000666667	-0.0303103	0.0303177	-1.59279
15	-0.000666667	-0.028289	0.0282968	-1.59436
16	-0.000666667	-0.0265202	0.0265286	-1.59593
17	-0.000666667	-0.0249595	0.0249684	-1.5975
18	-0.000666667	-0.0235722	0.0235817	-1.59907
19	-0.000666667	-0.0223389	0.0223489	-1.60064
20	-0.000666667	-0.0212137	0.0212242	-1.60221
21	-0.000666667	-0.0202028	0.0202138	-1.60378
22	-0.000666667	-0.0192838	0.0192953	-1.60535
23	-0.000666667	-0.0184447	0.0184568	-1.60692
24	-0.000666667	-0.0176755	0.0176881	-1.6085
25	-0.000666667	-0.0169678	0.0169809	-1.61007
26	-0.000666667	-0.0163145	0.0163281	-1.61164
27	-0.000666667	-0.0157096	0.0157237	-1.61321
28	-0.000666667	-0.0151478	0.0151625	-1.61478
29	-0.000666667	-0.0146248	0.01464	-1.61635
30	-0.000666667	-0.0141366	0.0141523	-1.61792
31	-0.000666667	-0.0136799	0.0136962	-1.61949
32	-0.000666667	-0.0132517	0.0132685	-1.62106
33	-0.000666667	-0.0128495	0.0128668	-1.62263
34	-0.000666667	-0.0124709	0.0124887	-1.6242
35	-0.000666667	-0.0121139	0.0121322	-1.62577
36	-0.000666667	-0.0117767	0.0117955	-1.62734
37	-0.000666667	-0.0114577	0.0114771	-1.62892
38	-0.000666667	-0.0111555	0.0111754	-1.63049
39	-0.000666667	-0.0108688	0.0108892	-1.63206
40	-0.000666667	-0.0105964	0.0106173	-1.63363
41	-0.000666667	-0.0103372	0.0103587	-1.6352
42	-0.000666667	-0.0100904	0.0101124	-1.63677
43	-0.000666667	-0.00985506	0.00987758	-1.63834
44	-0.000666667	-0.00963039	0.00965344	-1.63991
45	-0.000666667	-0.00941569	0.00943926	-1.64148
46	-0.000666667	-0.00921031	0.00923441	-1.64305
47	-0.000666667	-0.00901366	0.00903828	-1.64462
48	-0.000666667	-0.00882518	0.00885032	-1.64619
49	-0.000666667	-0.00864438	0.00867005	-1.64777
50	-0.000666667	-0.0084708	0.008497	-1.64934
51	-0.000666667	-0.00830402	0.00833873	-1.65091
52	-0.000666667	-0.00814363	0.00817087	-1.65248
53	-0.000666667	-0.00798929	0.00801705	-1.65405
54	-0.000666667	-0.00784064	0.00786894	-1.65562
55	-0.000666667	-0.0076974	0.00772621	-1.65719
56	-0.000666667	-0.00755925	0.00758859	-1.65876
57	-0.000666667	-0.00742594	0.0074558	-1.66033
58	-0.000666667	-0.00729721	0.0073276	-1.6619
59	-0.000666667	-0.00717284	0.00720375	-1.66347
60	-0.000666667	-0.0070526	0.00708404	-1.66504
61	-0.000666667	-0.00693629	0.00696825	-1.66661
62	-0.000666667	-0.00682372	0.00685621	-1.66819
63	-0.000666667	-0.00671471	0.00674773	-1.66976
64	-0.000666667	-0.0066091	0.00664264	-1.67133
65	-0.000666667	-0.00650673	0.00654079	-1.6729
66	-0.000666667	-0.00640745	0.00644204	-1.67447
67	-0.000666667	-0.00631112	0.00634623	-1.67604
68	-0.000666667	-0.00621762	0.00625325	-1.67761
69	-0.000666667	-0.00612681	0.00616297	-1.67918
70	-0.000666667	-0.00603859	0.00607528	-1.68075
71	-0.000666667	-0.00595285	0.00599006	-1.68232
72	-0.000666667	-0.00586947	0.00590721	-1.68389
73	-0.000666667	-0.00578838	0.00582664	-1.68546
74	-0.000666667	-0.00570946	0.00574825	-1.68704
75	-0.000666667	-0.00563264	0.00567195	-1.68861
76	-0.000666667	-0.00555783	0.00559767	-1.69018
77	-0.000666667	-0.00548496	0.00552532	-1.69175
78	-0.000666667	-0.00541394	0.00545483	-1.69332
79	-0.000666667	-0.00534471	0.00538613	-1.69489
80	-0.000666667	-0.00527721	0.00531915	-1.69646
81	-0.000666667	-0.00521136	0.00525383	-1.69803
82	-0.000666667	-0.00514712	0.00519011	-1.6996
83	-0.000666667	-0.00508441	0.00512793	-1.70117
84	-0.000666667	-0.00502318	0.00506723	-1.70274
85	-0.000666667	-0.00496339	0.00500796	-1.70431
86	-0.000666667	-0.00490498	0.00495008	-1.70588
87	-0.000666667	-0.00484791	0.00489353	-1.70746
88	-0.000666667	-0.00479212	0.00483827	-1.70903
89	-0.000666667	-0.00473758	0.00478426	-1.7106
90	-0.000666667	-0.00468424	0.00473145	-1.71217
91	-0.000666667	-0.00463207	0.0046798	-1.71374
92	-0.000666667	-0.00458103	0.00462928	-1.71531
93	-0.000666667	-0.00453107	0.00457985	-1.71688
94	-0.000666667	-0.00448217	0.00453148	-1.71845
95	-0.000666667	-0.0044343	0.00448413	-1.72002
96	-0.000666667	-0.00438741	0.00443777	-1.72159
97	-0.000666667	-0.00434148	0.00439237	-1.72316
98	-0.000666667	-0.00429648	0.0043479	-1.72473
99	-0.000666667	-0.00425239	0.00430433	-1.72631
100	-0.000666667	-0.00420917	0.00426164	-1.72788

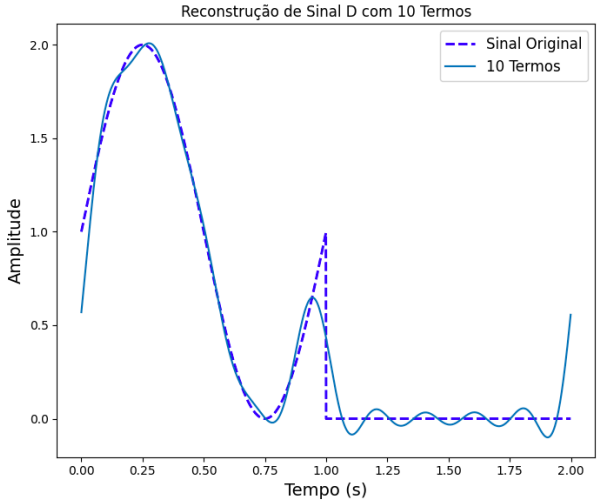
SINAL D

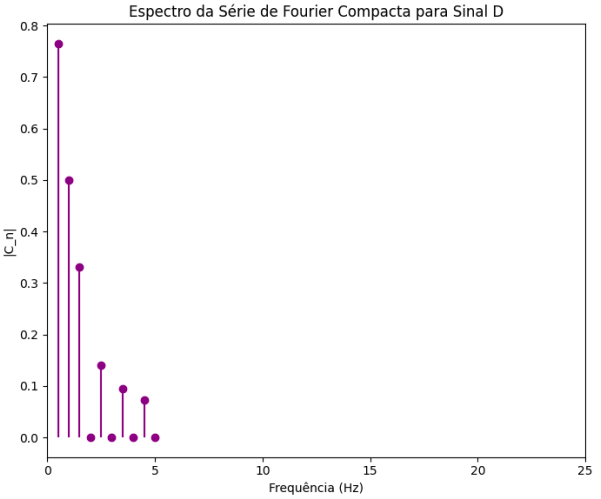

Reconstrução de Sinal D com 3 Termos
Sinal Original
3 Termos
Amplitude
Tempo (s)

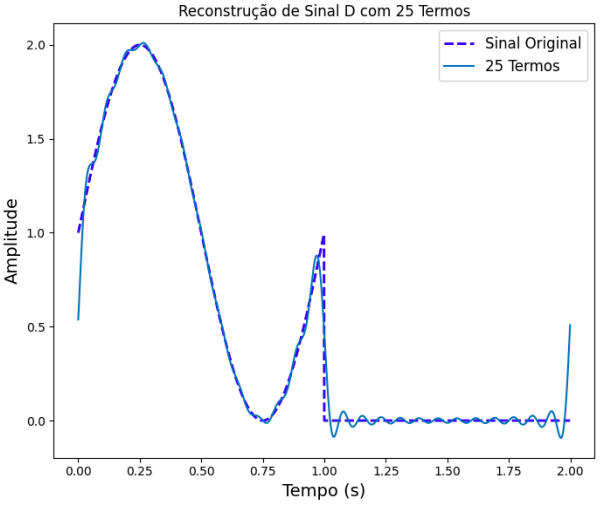

Espectro da Série de Fourier Compacta para Sinal D
|C_n|
Frequência (Hz)

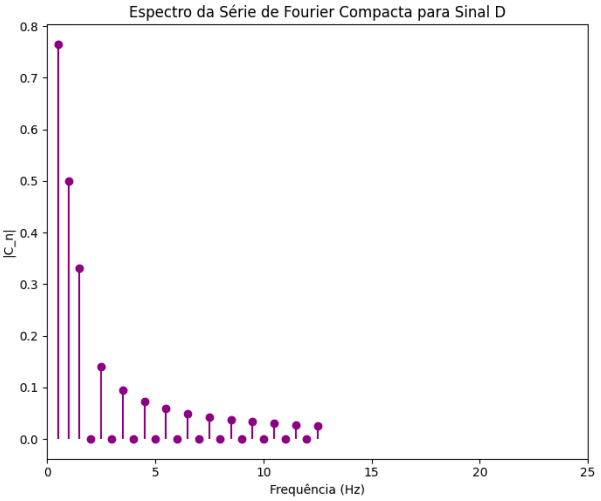

Reconstrução de Sinal D com 5 Termos
Sinal Original
5 Termos
Amplitude
Tempo (s)

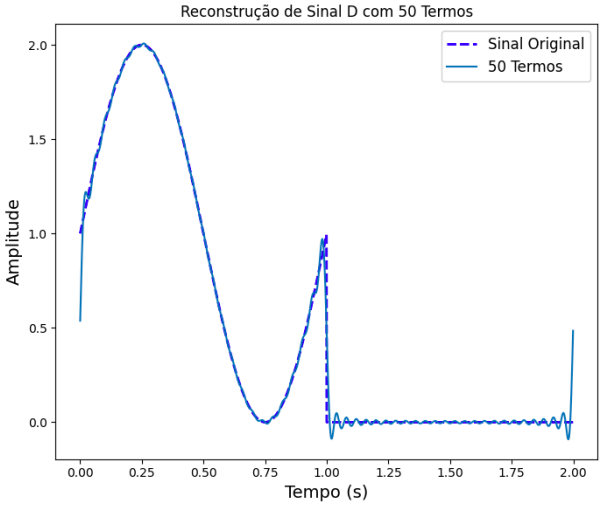

Espectro da Série de Fourier Compacta para Sinal D
|C_n|
Frequência (Hz)

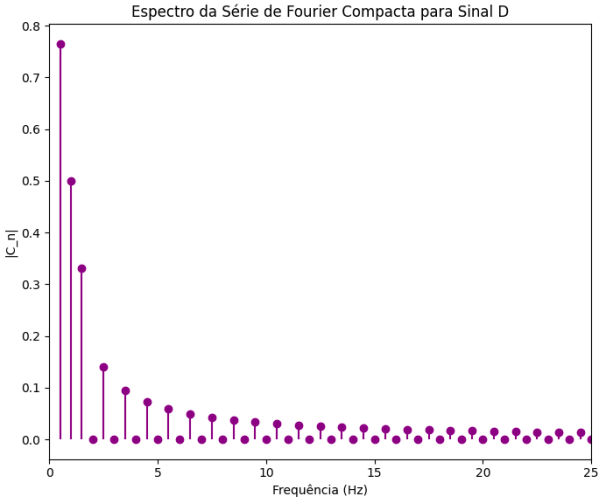

Reconstrução de Sinal D com 10 Termos
Sinal Original
10 Termos
Amplitude
Tempo (s)

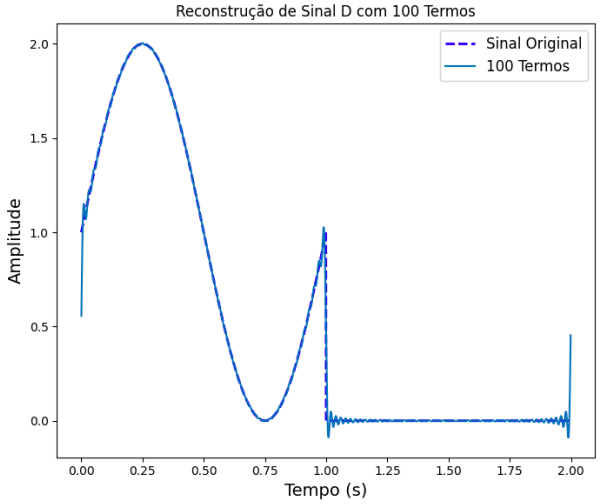

Espectro da Série de Fourier Compacta para Sinal D
|C_n|
Frequência (Hz)


Reconstrução de Sinal D com 25 Termos
Sinal Original
25 Termos
Amplitude
Tempo (s)


Espectro da Série de Fourier Compacta para Sinal D
|C_n|
Frequência (Hz)







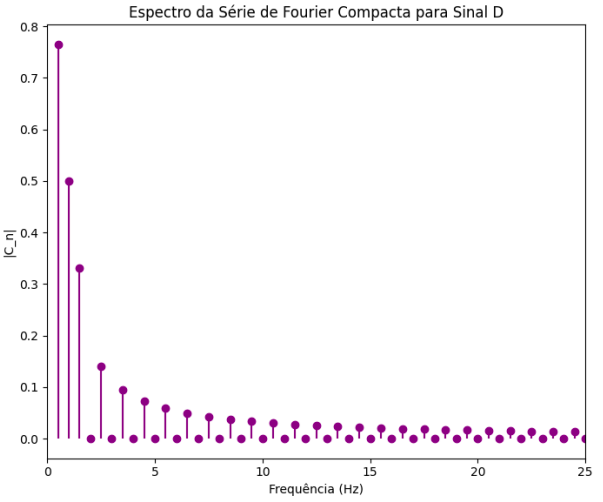


Tabela de coeficientes para Sinal D com 100 termos:

Termo (n)	a_n	b_n	C_n	θ_n (rad)
0	1	0	0.5	0
1	0.425412	0.636619	0.765676	0.981708
2	−2.77556e−17	0.5	0.5	1.5708
3	−0.253649	0.212205	0.330789	2.44492
4	−2.77556e−17	−7.63278e−17	8.12177e−17	−1.91957
5	−0.0596315	0.127321	0.140594	2.00881
6	−1.38778e−17	−1.38778e−17	1.96262e−17	−2.35619
7	−0.0272953	0.090942	0.0949499	1.86238
8	−3.1225e−17	2.08167e−17	3.75278e−17	2.55359
9	−0.0155366	0.0707308	0.0724171	1.78702
10	6.93889e−18	−4.16334e−17	4.22076e−17	−1.40565
11	−0.00988344	0.0578688	0.0587067	1.73995
12	−4.16334e−17	−3.81639e−17	5.64785e−17	−2.39965
13	−0.00671765	0.0489639	0.0494226	1.70714
14	−3.46945e−18	−2.77556e−17	2.79716e−17	−1.69515
15	−0.00476231	0.0424335	0.0426999	1.68256
16	−1.26635e−16	−1.21431e−16	1.75447e−16	−2.37717
17	−0.00346855	0.0374393	0.0375996	1.66318
18	−1.42247e−16	1.52656e−16	2.08658e−16	2.32892
19	−0.00256754	0.0334964	0.0335946	1.6473
20	−8.50815e−17	−1.21431e−16	1.48225e−16	−2.18152
21	−0.00191464	0.0303842	0.0303647	1.63389
22	−2.32453e−16	4.85723e−17	2.37473e−16	2.9356
23	−0.00142627	0.0276671	0.0277038	1.6223
24	−1.47451e−17	1.21431e−17	1.91017e−17	2.45267
25	−0.00105135	0.0254517	0.0254734	1.61288
26	−1.99493e−16	−1.38778e−17	1.99975e−16	−3.07214
27	−0.00075724	0.0235644	0.0235765	1.60292
28	1.64799e−16	−7.63278e−17	1.81617e−16	−0.433742
29	−0.000522242	0.0219372	0.0219434	1.5946
30	−2.58668e−16	3.7817e−16	4.53703e−16	2.15615
31	−0.000331497	0.0205199	0.0205226	1.58695
32	−2.68882e−16	−1.249e−16	2.96475e−16	−2.70673
33	−0.00017454	0.0192742	0.019275	1.57985
34	3.6169e−16	7.63278e−17	3.69656e−16	0.20798
35	−4.38321e−05	0.0181708	0.0181709	1.57321
36	−2.56739e−16	3.44343e−16	4.29519e−16	2.21147
37	6.61759e−05	0.0171866	0.0171867	1.56695
38	−8.67362e−17	−1.73472e−17	8.84539e−17	−2.9442
39	0.000159638	0.0163032	0.0163039	1.561
40	−1.47451e−17	−1.73472e−17	2.27672e−17	−2.27529
41	0.000239715	0.0155058	0.0155077	1.55534
42	2.04697e−16	2.11636e−16	2.94433e−16	0.802863
43	0.000308849	0.0147826	0.0147858	1.54991
44	−2.41994e−16	9.97466e−17	2.61745e−16	2.75063
45	0.000368947	0.0141235	0.0141284	1.54468
46	−2.68882e−17	8.84709e−17	9.24666e−17	1.86585
47	0.000421519	0.0135205	0.0135271	1.53963
48	3.1572e−16	−4.42354e−17	3.18804e−16	−0.139204
49	0.000467771	0.0129666	0.012975	1.53474
50	1.0842e−16	1.05818e−16	1.51501e−16	0.773253
51	0.000508678	0.012456	0.0124664	1.52998
52	9.80119e−17	1.9082e−17	9.98521e−17	0.192285
53	0.000545034	0.0119839	0.0119963	1.52535
54	−1.96891e−16	6.245e−17	2.06558e−16	2.83445
55	0.000577488	0.0115461	0.0115685	1.52082
56	2.27249e−16	−2.82095e−16	3.84113e−16	−0.726879
57	0.000606581	0.0111389	0.0111554	1.51639
58	2.56739e−16	1.19696e−16	2.8327e−16	0.436257
59	0.000632762	0.0107593	0.0107778	1.51205
60	−3.23092e−16	6.85216e−17	3.30278e−16	2.93261
61	0.000656406	0.0104044	0.0104251	1.50779
62	−8.67362e−19	−2.25514e−16	2.25516e−16	−1.57464
63	0.000677831	0.0100721	0.0100949	1.5036
64	−2.4503e−16	9.67108e−17	2.63425e−16	2.76567
65	0.000697307	0.00976809	0.00978497	1.49947
66	−1.52656e−16	−4.17201e−16	4.44253e−16	−1.92157
67	0.000715062	0.00946668	0.00949365	1.4954
68	2.79724e−16	−8.67362e−18	2.79859e−16	−0.0309978
69	0.000731294	0.00919022	0.00921927	1.49139
70	−1.32786e−16	1.83881e−16	2.26767e−16	2.19594
71	0.000746173	0.00892927	0.00896039	1.48743
72	−3.77302e−16	−2.25514e−17	3.77976e−16	−3.08189
73	0.000759844	0.00868256	0.00871575	1.4835
74	−1.86483e−16	−1.8735e−16	2.6434e−16	−2.35387
75	0.000772435	0.00844896	0.00848419	1.47963
76	−5.76796e−17	1.38778e−17	5.93256e−17	2.90548
77	0.000784057	0.00822743	0.00826471	1.47579
78	−2.02095e−16	3.1225e−17	2.04493e−16	2.9883
79	0.000794887	0.00801707	0.00805637	1.47198
80	−1.19262e−16	2.81893e−17	1.22548e−16	2.90949
81	0.000804769	0.00781705	0.00785836	1.46821
82	−1.45717e−16	6.93889e−18	1.45882e−16	3.09401
83	0.00081402	0.00762661	0.00766993	1.46446
84	1.77809e−16	1.83013e−16	2.55167e−16	0.79982
85	0.000822625	0.00744589	0.00749039	1.46075
86	−4.77049e−17	1.52656e−16	1.59936e−16	1.87368
87	0.000830642	0.00727186	0.00731915	1.45706
88	−4.09395e−16	2.2031e−16	4.64909e−16	2.6479
89	0.000838125	0.00710637	0.00715562	1.4534
90	8.84709e−17	−1.01481e−16	1.34631e−16	−0.853785
91	0.00084512	0.00694811	0.00699932	1.44976
92	4.90059e−17	4.09395e−16	4.12317e−16	1.45166
93	0.000851668	0.00679661	0.00684976	1.44614
94	−1.7911e−16	−1.1189e−16	2.11187e−16	−2.58321
95	0.000857086	0.00665144	0.00670653	1.44254
96	3.76001e−16	−1.63498e−16	4.1001e−16	−0.41017
97	0.000863569	0.00651222	0.00656923	1.43896
98	2.38524e−17	2.14238e−16	2.15562e−16	1.45992
99	0.000868986	0.00637858	0.0064375	1.4354
100	4.64039e−17	−1.73906e−16	1.79991e−16	−1.31004