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1 // Jagmohan L. Humar "Dynamics of Structures Third Edition"
2 // P502-P504頁，與第App_6J測試相同，僅提供邊界值條件是：
3 // t=4.5秒時， y0 = [-0.68877 | -1.37729]
4 // t=16.5秒時， y1 = [0.11710 | 0.23071]。
5
6 using System;
7 using Matrix_0;
8
9 namespace ConsoleApp6M
10 {
11     internal class Program
12     {
13         static void Main(string[] args)
14         {
15
16             // 已知邊界條件，其向量為BVal
17             // 邊界值 @t = 4.5
18             double[,] y0 = { { -0.68877 }, { -1.37729 } };
19             // 邊界值 @t = 16.5
20             double[,] y1 = { { 0.11710 }, { 0.23071 } };
21             ReMatrix BVal = (ReMatrix)y0 | y1;
22
23             // 已知陣列 M, K, and C
24             double[,] M = { { 2, 0 }, { 0, 1 } };
25             double[,] K = { { 3, -1 }, { -1, 1 } };
26             double[,] C = { { 0.4, -0.05 }, { -0.05, 0.2 } };
27
28             // 建構系統矩陣A：
29             ReMatrix Mi = ~(ReMatrix)M;
30             Iden iden = new Iden(2);
31             ReMatrix I = iden.Matrix;
32             Zero zero = new Zero(2);
33             ReMatrix O = zero.Matrix;
34             ReMatrix A = ((-1.0 * Mi * C) & (-1.0 * Mi * K)) | (I & O);
35
36             // 系統與狀態係數。
37             // 特徵值矩陣D和特徵向量矩陣Q。
38             EIG eig = new EIG(A);
39             CxMatrix D = eig.CxMatrixD;
40             CxMatrix V = eig.CxVector;
41             CxMatrix Q = eig.CxMatrixQ;
42             // 係數向量d。
43             CxToHexp Hexp = new CxToHexp(D, Q, 4.5);
44             CxMatrix MatTemp = Hexp.GetCxMatrix;
45             RowSlice rowSlice = new RowSlice(MatTemp, 2, 1);
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```
46     CxMatrix Mat1 = rowSlice.GetCxMatrix;
47
48     Hexp = new CxToHexp(D, Q, 16.5);
49     MatTemp = Hexp.GetCxMatrix;
50     rowSlice = new RowSlice(MatTemp, 2, 1);
51     CxMatrix Mat2 = rowSlice.GetCxMatrix;
52
53     // 矩陣Mat1和矩陣Mat2垂直合併。
54     CxMatrix Mat = Mat1 | Mat2;
55     CxMatrix d = ~ Mat * BVal;
56
57     // 列印標題。
58     Console.Write("\n****{0,6} 系 {0,4} 統 {0,4} 與 {0,4} 狀 {0,4} 態 {0,4} 參  ➤
        {0,4} 數 {0,6} ****\n", "");
59
60     // 列印系統與狀態參數。
61     Console.Write("\n***{0,5} 特徵值V{0,5} ***\n{1}\n", "", new PR  ➤
        (V));
62     Console.Write("\n***{0,5} 特徵向量矩陣Q{0,5} ***\n{1}\n", "", new PR  ➤
        (Q));
63     Console.Write("\n***{0,5} 係數向量d{0,5} ***\n{1}\n", "", new PR  ➤
        (d));
64
65     double step = 0.5;
66     int iRow = (int)(50 / step + 1);
67     int iCol = M.GetLength(1) + 1;
68     ReMatrix Disp = new ReMatrix(iRow, iCol);
69     ReMatrix Vel = new ReMatrix(iRow, iCol);
70     ReMatrix Acc = new ReMatrix(iRow, iCol);
71
72     for (int i = 0; i != iRow; i++)
73     {
74         double t = step * i;
75
76         Hexp = new CxToHexp(D, Q, t);
77         MatTemp = Hexp.GetCxMatrix;
78         ReMatrix yh = (ReMatrix)(MatTemp * d);
79         ReMatrix yhDot = A * yh;
80
81         Acc.Matrix[i, 0] = t;
82         Acc.Matrix[i, 1] = yhDot.Matrix[0, 0];
83         Acc.Matrix[i, 2] = yhDot.Matrix[1, 0];
84
85         Vel.Matrix[i, 0] = t;
86         Vel.Matrix[i, 1] = yh.Matrix[0, 0];
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87         Vel.Matrix[i, 2] = yh.Matrix[1, 0];
88
89         Disp.Matrix[i, 0] = t;
90         Disp.Matrix[i, 1] = yh.Matrix[2, 0];
91         Disp.Matrix[i, 2] = yh.Matrix[3, 0];
92     }
93
94     // 列印標題。
95     Console.Write("\n****{0, 10} 狀{0, 5} 態{0, 5} 響{0, 5} 應{0, 10}****\n",
96         "");
97
98     // 列印空間節點之狀態響應(變位, 速度, 和加速)。
99     Console.Write("\n{0, 5} ***位移反應量***{0, 5}\n{0, 8} 時間(秒)" +
100         "{0, 8} 第0點位移{0, 8} 第1點位移\n\n{1}", "", new PR(Disp));
101     Console.Write("\n{0, 5} ***速度反應量***{0, 5}\n{0, 8} 時間(秒)" +
102         "{0, 8} 第0點速度{0, 8} 第1點速度\n\n{1}", "", new PR(Vel));
103     Console.Write("\n{0, 5} ***加速度反應量***{0, 5}\n{0, 8} 時間(秒)" +
104         "{0, 8} 第0點加速度{0, 7} 第1點加速度\n\n{1}", "", new PR(Acc));
105
106     // 列印時間、節點變位、速度、和加速度等序列。
107     Console.Write("\n時間序列\n{0}\n", new PR4(Disp, 0));
108
109     Console.Write("\n第0點變位序列\n{0}\n", new PR4(Disp, 1));
110     Console.Write("\n第1點變位序列\n{0}\n", new PR4(Disp, 2));
111     Console.Write("\n第0點速度序列\n{0}\n", new PR4(Vel, 1));
112     Console.Write("\n第1點速度序列\n{0}\n", new PR4(Vel, 2));
113     Console.Write("\n第0點加速度序列\n{0}\n", new PR4(Acc, 1));
114     Console.Write("\n第1點加速度序列\n{0}\n", new PR4(Acc, 2));
115     Console.Write("\n\n");
116 }
117 }
118 }
119 /*
120 ****          系      統      與      狀      態      參      數          ****
121
122     ***      特徵值V      ***
123     -0.11666 + 1.40933i
124     -0.11666 - 1.40933i
125     -0.08334 + 0.70221i
126     -0.08334 - 0.70221i
127
128     ***      特徵向量矩陣Q      ***
129     0.57745 + 0.00000i, 0.57745 + 0.00000i,
130     0.25800 + 0.00000i, 0.25800 + 0.00000i

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131
132  -0.57707 - 0.01365i, -0.57707 + 0.01365i,
133  0.51648 - 0.00609i, 0.51648 + 0.00609i
134
135  -0.03369 - 0.40695i, -0.03369 + 0.40695i,
136  -0.04300 - 0.36231i, -0.04300 + 0.36231i
137
138  0.02405 + 0.40748i, 0.02405 - 0.40748i,
139  -0.09463 - 0.72428i, -0.09463 + 0.72428i
140
141  ***      係數向量d      ***
142      0.00484 + 0.00005i
143      0.00484 - 0.00005i
144     -0.01085 + 1.37914i
145     -0.01085 - 1.37914i
146
147  ****      狀      態      響      應      ****
148
149      ***位移反應量***
150      時間(秒)      第0點位移      第1點位移
151      0.00000      0.99999      2.00000
152      0.50000      0.93966      1.87981
153      1.00000      0.77180      1.54693
154      1.50000      0.52457      1.05824
155      2.00000      0.23387      0.48396
156      2.50000     -0.06169     -0.10151
157      3.00000     -0.32594     -0.62850
158      3.50000     -0.52953     -1.03960
159      4.00000     -0.65311     -1.29529
160      4.50000     -0.68877     -1.37729
161      5.00000     -0.63986     -1.28919
162      5.50000     -0.51942     -1.05458
163      6.00000     -0.34766     -0.71285
164      6.50000     -0.14893     -0.31328
165      7.00000      0.05142      0.09168
166      7.50000      0.22990      0.45312
167      8.00000      0.36732      0.73136
168      8.50000      0.45067      0.90003
169      9.00000      0.47413      0.94810
170      9.50000      0.43939      0.87986
171     10.00000      0.35495      0.71296
172     10.50000      0.23471      0.47520
173     11.00000      0.09591      0.20035
174     11.50000     -0.04325     -0.07623
175     12.00000     -0.16599     -0.32182

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176	12.50000	-0.25891	-0.50988
177	13.00000	-0.31336	-0.62268
178	13.50000	-0.32611	-0.65269
179	14.00000	-0.29918	-0.60277
180	14.50000	-0.23909	-0.48509
181	15.00000	-0.15568	-0.31900
182	15.50000	-0.06063	-0.12814
183	16.00000	0.03398	0.06269
184	16.50000	0.11710	0.23071
185	17.00000	0.17986	0.35772
186	17.50000	0.21642	0.43195
187	18.00000	0.22445	0.44889
188	18.50000	0.20516	0.41123
189	19.00000	0.16294	0.32790
190	19.50000	0.10460	0.21245
191	20.00000	0.03842	0.08112
192	20.50000	-0.02705	-0.04933
193	21.00000	-0.08400	-0.16357
194	21.50000	-0.12632	-0.24937
195	22.00000	-0.15016	-0.29880
196	22.50000	-0.15422	-0.30886
197	23.00000	-0.13968	-0.28142
198	23.50000	-0.10980	-0.22269
199	24.00000	-0.06937	-0.14214
200	24.50000	-0.02398	-0.05110
201	25.00000	0.02061	0.03872
202	25.50000	0.05924	0.11672
203	26.00000	0.08782	0.17456
204	26.50000	0.10374	0.20700
205	27.00000	0.10610	0.21225
206	27.50000	0.09566	0.19191
207	28.00000	0.07465	0.15047
208	28.50000	0.04640	0.09452
209	29.00000	0.01488	0.03187
210	29.50000	-0.01589	-0.02957
211	30.00000	-0.04228	-0.08261
212	30.50000	-0.06150	-0.12164
213	31.00000	-0.07186	-0.14315
214	31.50000	-0.07284	-0.14595
215	32.00000	-0.06512	-0.13119
216	32.50000	-0.05031	-0.10201
217	33.00000	-0.03074	-0.06303
218	33.50000	-0.00911	-0.01966
219	34.00000	0.01188	0.02257
220	34.50000	0.02980	0.05872

221	35.00000	0.04277	0.08499
222	35.50000	0.04964	0.09905
223	36.00000	0.05008	0.10023
224	36.50000	0.04453	0.08942
225	37.00000	0.03412	0.06889
226	37.50000	0.02048	0.04183
227	38.00000	0.00548	0.01198
228	38.50000	-0.00896	-0.01691
229	39.00000	-0.02117	-0.04149
230	39.50000	-0.02988	-0.05919
231	40.00000	-0.03434	-0.06847
232	40.50000	-0.03436	-0.06888
233	41.00000	-0.03031	-0.06107
234	41.50000	-0.02299	-0.04663
235	42.00000	-0.01354	-0.02779
236	42.50000	-0.00324	-0.00716
237	43.00000	0.00662	0.01266
238	43.50000	0.01491	0.02940
239	44.00000	0.02078	0.04129
240	44.50000	0.02372	0.04733
241	45.00000	0.02361	0.04727
242	45.50000	0.02070	0.04160
243	46.00000	0.01556	0.03146
244	46.50000	0.00898	0.01840
245	47.00000	0.00186	0.00420
246	47.50000	-0.00491	-0.00936
247	48.00000	-0.01056	-0.02074
248	48.50000	-0.01449	-0.02874
249	49.00000	-0.01639	-0.03270
250	49.50000	-0.01619	-0.03246
251	50.00000	-0.01408	-0.02838
252			
253	***速度反應量***		
254	時間(秒)	第0點速度	第1點速度
255	0.00000	0.00000	0.00000
256	0.50000	-0.23582	-0.46889
257	1.00000	-0.42608	-0.84337
258	1.50000	-0.55070	-1.08769
259	2.00000	-0.59906	-1.18431
260	2.50000	-0.57099	-1.13410
261	3.00000	-0.47611	-0.95455
262	3.50000	-0.33176	-0.67656
263	4.00000	-0.15994	-0.34010
264	4.50000	0.01613	0.01085
265	5.00000	0.17508	0.33355

266	5.50000	0.29983	0.59156
267	6.00000	0.37898	0.75872
268	6.50000	0.40741	0.82185
269	7.00000	0.38608	0.78150
270	7.50000	0.32136	0.65089
271	8.00000	0.22395	0.45320
272	8.50000	0.10748	0.21780
273	9.00000	-0.01304	-0.02400
274	9.50000	-0.12303	-0.24298
275	10.00000	-0.21002	-0.41521
276	10.50000	-0.26511	-0.52443
277	11.00000	-0.28395	-0.56304
278	11.50000	-0.26705	-0.53225
279	12.00000	-0.21939	-0.44117
280	12.50000	-0.14936	-0.30512
281	13.00000	-0.06738	-0.14355
282	13.50000	0.01567	0.02252
283	14.00000	0.08984	0.17302
284	14.50000	0.14719	0.29115
285	15.00000	0.18252	0.36524
286	15.50000	0.19360	0.38981
287	16.00000	0.18112	0.36583
288	16.50000	0.14837	0.30012
289	17.00000	0.10070	0.20397
290	17.50000	0.04477	0.09143
291	18.00000	-0.01223	-0.02274
292	18.50000	-0.06344	-0.12486
293	19.00000	-0.10315	-0.20388
294	19.50000	-0.12740	-0.25242
295	20.00000	-0.13445	-0.26726
296	20.50000	-0.12479	-0.24938
297	21.00000	-0.10095	-0.20345
298	21.50000	-0.06701	-0.13708
299	22.00000	-0.02791	-0.05966
300	22.50000	0.01124	0.01879
301	23.00000	0.04580	0.08886
302	23.50000	0.07210	0.14285
303	24.00000	0.08776	0.17553
304	24.50000	0.09184	0.18467
305	25.00000	0.08480	0.17105
306	25.50000	0.06834	0.13814
307	26.00000	0.04509	0.09146
308	26.50000	0.01830	0.03771
309	27.00000	-0.00861	-0.01614
310	27.50000	-0.03241	-0.06369

311	28.00000	-0.05050	-0.09985
312	28.50000	-0.06113	-0.12129
313	29.00000	-0.06360	-0.12667
314	29.50000	-0.05825	-0.11665
315	30.00000	-0.04638	-0.09362
316	30.50000	-0.02995	-0.06133
317	31.00000	-0.01131	-0.02430
318	31.50000	0.00714	0.01270
319	32.00000	0.02321	0.04527
320	32.50000	0.03523	0.06989
321	33.00000	0.04212	0.08422
322	33.50000	0.04350	0.08738
323	34.00000	0.03963	0.07987
324	34.50000	0.03140	0.06347
325	35.00000	0.02010	0.04084
326	35.50000	0.00729	0.01519
327	36.00000	-0.00539	-0.01018
328	36.50000	-0.01643	-0.03228
329	37.00000	-0.02466	-0.04878
330	37.50000	-0.02929	-0.05818
331	38.00000	-0.03005	-0.05995
332	38.50000	-0.02716	-0.05448
333	39.00000	-0.02127	-0.04299
334	39.50000	-0.01332	-0.02731
335	40.00000	-0.00444	-0.00964
336	40.50000	0.00424	0.00779
337	41.00000	0.01170	0.02291
338	41.50000	0.01718	0.03410
339	42.00000	0.02019	0.04035
340	42.50000	0.02057	0.04129
341	43.00000	0.01849	0.03725
342	43.50000	0.01439	0.02910
343	44.00000	0.00891	0.01815
344	44.50000	0.00280	0.00593
345	45.00000	-0.00316	-0.00601
346	45.50000	-0.00828	-0.01627
347	46.00000	-0.01201	-0.02378
348	46.50000	-0.01401	-0.02787
349	47.00000	-0.01418	-0.02833
350	47.50000	-0.01265	-0.02540
351	48.00000	-0.00973	-0.01969
352	48.50000	-0.00589	-0.01210
353	49.00000	-0.00167	-0.00368
354	49.50000	0.00241	0.00452
355	50.00000	0.00587	0.01152

356			
357	***	加速度反應量	***
358		時間(秒)	第0點加速度
359			第1點加速度
360		0.00000	-0.49999
361		0.50000	-0.43414
362		1.00000	-0.32010
363		1.50000	-0.62776
364		2.00000	-0.17479
365		2.50000	-0.01862
366		3.00000	-0.04318
367		3.50000	0.12763
368		4.00000	0.23809
369		4.50000	0.24601
370		5.00000	0.46967
371		5.50000	0.32393
372		6.00000	0.35550
373		6.50000	0.70221
374		7.00000	0.34156
375		7.50000	0.68716
376		8.00000	0.28852
377		8.50000	0.59137
378		9.00000	0.20667
379		9.50000	0.43184
380		10.00000	0.10824
381		10.50000	0.23239
382		11.00000	0.00581
383		11.50000	0.02035
384		12.00000	-0.08897
385		12.50000	-0.17725
386		13.00000	-0.16629
387		13.50000	-0.33733
388		14.00000	-0.21877
389		14.50000	-0.44348
390		15.00000	-0.24204
391		15.50000	-0.48755
392		16.00000	-0.23514
393		16.50000	-0.46982
394		17.00000	-0.20063
395		17.50000	-0.39802
396		18.00000	-0.14433
397		18.50000	-0.28547
398		19.00000	-0.07456
399		19.50000	-0.14885
400		20.00000	-0.00098
		20.50000	-0.00603
			0.12608
			0.23309
			0.30453
			0.33466
			0.32285
			0.27348
			0.19513
			0.09940
			-0.00077
			-0.09282
			-0.16621
			-0.21362
			-0.23157
			-0.22049
			-0.18426
			-0.12934
			-0.06374
			0.00403
			0.06592

401	21.00000	0.05933	0.11521
402	21.50000	0.07477	0.14711
403	22.00000	0.07992	0.15918
404	22.50000	0.07512	0.15144
405	23.00000	0.06188	0.12625
406	23.50000	0.04251	0.08792
407	24.00000	0.01982	0.04206
408	24.50000	-0.00333	-0.00522
409	25.00000	-0.02425	-0.04808
410	25.50000	-0.04072	-0.08169
411	26.00000	-0.05118	-0.10278
412	26.50000	-0.05483	-0.10988
413	27.00000	-0.05171	-0.10335
414	27.50000	-0.04264	-0.08514
415	28.00000	-0.02913	-0.05838
416	28.50000	-0.01315	-0.02692
417	29.00000	0.00316	0.00517
418	29.50000	0.01778	0.03410
419	30.00000	0.02905	0.05674
420	30.50000	0.03589	0.07091
421	31.00000	0.03786	0.07559
422	31.50000	0.03518	0.07093
423	32.00000	0.02856	0.05819
424	32.50000	0.01915	0.03949
425	33.00000	0.00828	0.01755
426	33.50000	-0.00269	-0.00474
427	34.00000	-0.01247	-0.02468
428	34.50000	-0.02003	-0.04005
429	35.00000	-0.02465	-0.04939
430	35.50000	-0.02602	-0.05208
431	36.00000	-0.02419	-0.04838
432	36.50000	-0.01961	-0.03926
433	37.00000	-0.01303	-0.02624
434	37.50000	-0.00540	-0.01118
435	38.00000	0.00228	0.00399
436	38.50000	0.00906	0.01748
437	39.00000	0.01420	0.02785
438	39.50000	0.01721	0.03411
439	40.00000	0.01792	0.03583
440	40.50000	0.01645	0.03317
441	41.00000	0.01316	0.02677
442	41.50000	0.00859	0.01767
443	42.00000	0.00338	0.00719
444	42.50000	-0.00180	-0.00331
445	43.00000	-0.00636	-0.01257

446	43.50000	-0.00982	-0.01959
447	44.00000	-0.01185	-0.02370
448	44.50000	-0.01232	-0.02466
449	45.00000	-0.01130	-0.02262
450	45.50000	-0.00900	-0.01806
451	46.00000	-0.00580	-0.01174
452	46.50000	-0.00217	-0.00454
453	47.00000	0.00144	0.00262
454	47.50000	0.00458	0.00890
455	48.00000	0.00692	0.01363
456	48.50000	0.00824	0.01638
457	49.00000	0.00847	0.01696
458	49.50000	0.00768	0.01549
459	50.00000	0.00605	0.01229

460

461 時間序列

462	0.0000,	0.5000,	1.0000,	1.5000,	2.0000,
463	2.5000,	3.0000,	3.5000,	4.0000,	4.5000,
464	5.0000,	5.5000,	6.0000,	6.5000,	7.0000,
465	7.5000,	8.0000,	8.5000,	9.0000,	9.5000,
466	10.0000,	10.5000,	11.0000,	11.5000,	12.0000,
467	12.5000,	13.0000,	13.5000,	14.0000,	14.5000,
468	15.0000,	15.5000,	16.0000,	16.5000,	17.0000,
469	17.5000,	18.0000,	18.5000,	19.0000,	19.5000,
470	20.0000,	20.5000,	21.0000,	21.5000,	22.0000,
471	22.5000,	23.0000,	23.5000,	24.0000,	24.5000,
472	25.0000,	25.5000,	26.0000,	26.5000,	27.0000,
473	27.5000,	28.0000,	28.5000,	29.0000,	29.5000,
474	30.0000,	30.5000,	31.0000,	31.5000,	32.0000,
475	32.5000,	33.0000,	33.5000,	34.0000,	34.5000,
476	35.0000,	35.5000,	36.0000,	36.5000,	37.0000,
477	37.5000,	38.0000,	38.5000,	39.0000,	39.5000,
478	40.0000,	40.5000,	41.0000,	41.5000,	42.0000,
479	42.5000,	43.0000,	43.5000,	44.0000,	44.5000,
480	45.0000,	45.5000,	46.0000,	46.5000,	47.0000,
481	47.5000,	48.0000,	48.5000,	49.0000,	49.5000,
482	50.0000,				

483

484

485 第0點變位序列

486	1.0000,	0.9397,	0.7718,	0.5246,	0.2339,
487	-0.0617,	-0.3259,	-0.5295,	-0.6531,	-0.6888,
488	-0.6399,	-0.5194,	-0.3477,	-0.1489,	0.0514,
489	0.2299,	0.3673,	0.4507,	0.4741,	0.4394,
490	0.3550,	0.2347,	0.0959,	-0.0433,	-0.1660,

```
491    -0.2589,    -0.3134,    -0.3261,    -0.2992,    -0.2391,
492    -0.1557,    -0.0606,     0.0340,     0.1171,     0.1799,
493     0.2164,     0.2245,     0.2052,     0.1629,     0.1046,
494     0.0384,    -0.0271,    -0.0840,    -0.1263,    -0.1502,
495    -0.1542,    -0.1397,    -0.1098,    -0.0694,    -0.0240,
496     0.0206,     0.0592,     0.0878,     0.1037,     0.1061,
497     0.0957,     0.0746,     0.0464,     0.0149,    -0.0159,
498    -0.0423,    -0.0615,    -0.0719,    -0.0728,    -0.0651,
499    -0.0503,    -0.0307,    -0.0091,     0.0119,     0.0298,
500     0.0428,     0.0496,     0.0501,     0.0445,     0.0341,
501     0.0205,     0.0055,    -0.0090,    -0.0212,    -0.0299,
502    -0.0343,    -0.0344,    -0.0303,    -0.0230,    -0.0135,
503    -0.0032,     0.0066,     0.0149,     0.0208,     0.0237,
504     0.0236,     0.0207,     0.0156,     0.0090,     0.0019,
505    -0.0049,    -0.0106,    -0.0145,    -0.0164,    -0.0162,
506    -0.0141,
507
508
509  第1點變位序列
510     2.0000,     1.8798,     1.5469,     1.0582,     0.4840,
511    -0.1015,    -0.6285,    -1.0396,    -1.2953,    -1.3773,
512   -1.2892,    -1.0546,    -0.7128,    -0.3133,     0.0917,
513     0.4531,     0.7314,     0.9000,     0.9481,     0.8799,
514     0.7130,     0.4752,     0.2004,    -0.0762,    -0.3218,
515    -0.5099,    -0.6227,    -0.6527,    -0.6028,    -0.4851,
516    -0.3190,    -0.1281,     0.0627,     0.2307,     0.3577,
517     0.4319,     0.4489,     0.4112,     0.3279,     0.2125,
518     0.0811,    -0.0493,    -0.1636,    -0.2494,    -0.2988,
519    -0.3089,    -0.2814,    -0.2227,    -0.1421,    -0.0511,
520     0.0387,     0.1167,     0.1746,     0.2070,     0.2123,
521     0.1919,     0.1505,     0.0945,     0.0319,    -0.0296,
522    -0.0826,    -0.1216,    -0.1431,    -0.1460,    -0.1312,
523    -0.1020,    -0.0630,    -0.0197,     0.0226,     0.0587,
524     0.0850,     0.0991,     0.1002,     0.0894,     0.0689,
525     0.0418,     0.0120,    -0.0169,    -0.0415,    -0.0592,
526    -0.0685,    -0.0689,    -0.0611,    -0.0466,    -0.0278,
527    -0.0072,     0.0127,     0.0294,     0.0413,     0.0473,
528     0.0473,     0.0416,     0.0315,     0.0184,     0.0042,
529    -0.0094,    -0.0207,    -0.0287,    -0.0327,    -0.0325,
530    -0.0284,
531
532  第0點速度序列
533     0.0000,    -0.2358,    -0.4261,    -0.5507,    -0.5991,
534    -0.5710,    -0.4761,    -0.3318,    -0.1599,     0.0161,
535     0.1751,     0.2998,     0.3790,     0.4074,     0.3861,
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536    0.3214,    0.2239,    0.1075,   -0.0130,   -0.1230,
537   -0.2100,   -0.2651,   -0.2839,   -0.2671,   -0.2194,
538   -0.1494,   -0.0674,    0.0157,    0.0898,    0.1472,
539    0.1825,    0.1936,    0.1811,    0.1484,    0.1007,
540    0.0448,   -0.0122,   -0.0634,   -0.1031,   -0.1274,
541   -0.1345,   -0.1248,   -0.1010,   -0.0670,   -0.0279,
542    0.0112,    0.0458,    0.0721,    0.0878,    0.0918,
543    0.0848,    0.0683,    0.0451,    0.0183,   -0.0086,
544   -0.0324,   -0.0505,   -0.0611,   -0.0636,   -0.0583,
545   -0.0464,   -0.0299,   -0.0113,    0.0071,    0.0232,
546    0.0352,    0.0421,    0.0435,    0.0396,    0.0314,
547    0.0201,    0.0073,   -0.0054,   -0.0164,   -0.0247,
548   -0.0293,   -0.0300,   -0.0272,   -0.0213,   -0.0133,
549   -0.0044,    0.0042,    0.0117,    0.0172,    0.0202,
550    0.0206,    0.0185,    0.0144,    0.0089,    0.0028,
551   -0.0032,   -0.0083,   -0.0120,   -0.0140,   -0.0142,
552   -0.0126,   -0.0097,   -0.0059,   -0.0017,    0.0024,
553    0.0059,
554
555
556  第1點速度序列
557    0.0000,   -0.4689,   -0.8434,   -1.0877,   -1.1843,
558   -1.1341,   -0.9545,   -0.6766,   -0.3401,    0.0108,
559    0.3336,    0.5916,    0.7587,    0.8218,    0.7815,
560    0.6509,    0.4532,    0.2178,   -0.0240,   -0.2430,
561   -0.4152,   -0.5244,   -0.5630,   -0.5323,   -0.4412,
562   -0.3051,   -0.1435,    0.0225,    0.1730,    0.2911,
563    0.3652,    0.3898,    0.3658,    0.3001,    0.2040,
564    0.0914,   -0.0227,   -0.1249,   -0.2039,   -0.2524,
565   -0.2673,   -0.2494,   -0.2035,   -0.1371,   -0.0597,
566    0.0188,    0.0889,    0.1428,    0.1755,    0.1847,
567    0.1710,    0.1381,    0.0915,    0.0377,   -0.0161,
568   -0.0637,   -0.0999,   -0.1213,   -0.1267,   -0.1166,
569   -0.0936,   -0.0613,   -0.0243,    0.0127,    0.0453,
570    0.0699,    0.0842,    0.0874,    0.0799,    0.0635,
571    0.0408,    0.0152,   -0.0102,   -0.0323,   -0.0488,
572   -0.0582,   -0.0599,   -0.0545,   -0.0430,   -0.0273,
573   -0.0096,    0.0078,    0.0229,    0.0341,    0.0403,
574    0.0413,    0.0372,    0.0291,    0.0181,    0.0059,
575   -0.0060,   -0.0163,   -0.0238,   -0.0279,   -0.0283,
576   -0.0254,   -0.0197,   -0.0121,   -0.0037,    0.0045,
577    0.0115,
578
579
580  第0點加速度序列
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581  -0.5000,  -0.4341,  -0.3201,  -0.1748,  -0.0186,
582   0.1276,   0.2460,   0.3239,   0.3555,   0.3416,
583   0.2885,   0.2067,   0.1082,   0.0058,  -0.0890,
584  -0.1663,  -0.2188,  -0.2420,  -0.2351,  -0.2006,
585  -0.1443,  -0.0746,  -0.0010,   0.0669,   0.1209,
586   0.1557,   0.1686,   0.1603,   0.1337,   0.0939,
587   0.0466,  -0.0021,  -0.0467,  -0.0825,  -0.1060,
588  -0.1153,  -0.1104,  -0.0926,  -0.0649,  -0.0315,
589   0.0031,   0.0346,   0.0593,   0.0748,   0.0799,
590   0.0751,   0.0619,   0.0425,   0.0198,  -0.0033,
591  -0.0242,  -0.0407,  -0.0512,  -0.0548,  -0.0517,
592  -0.0426,  -0.0291,  -0.0131,   0.0032,   0.0178,
593   0.0290,   0.0359,   0.0379,   0.0352,   0.0286,
594   0.0192,   0.0083,  -0.0027,  -0.0125,  -0.0200,
595  -0.0247,  -0.0260,  -0.0242,  -0.0196,  -0.0130,
596  -0.0054,   0.0023,   0.0091,   0.0142,   0.0172,
597   0.0179,   0.0164,   0.0132,   0.0086,   0.0034,
598  -0.0018,  -0.0064,  -0.0098,  -0.0119,  -0.0123,
599  -0.0113,  -0.0090,  -0.0058,  -0.0022,   0.0014,
600   0.0046,   0.0069,   0.0082,   0.0085,   0.0077,
601   0.0060,
602
603  第1點加速度序列
604  -1.0000,  -0.8582,  -0.6278,  -0.3437,  -0.0432,
605   0.2381,   0.4697,   0.6288,   0.7022,   0.6872,
606   0.5914,   0.4318,   0.2324,   0.0204,  -0.1773,
607  -0.3373,  -0.4435,  -0.4875,  -0.4698,  -0.3980,
608  -0.2855,  -0.1489,  -0.0060,   0.1261,   0.2331,
609   0.3045,   0.3347,   0.3229,   0.2735,   0.1951,
610   0.0994,  -0.0008,  -0.0928,  -0.1662,  -0.2136,
611  -0.2316,  -0.2205,  -0.1843,  -0.1293,  -0.0637,
612   0.0040,   0.0659,   0.1152,   0.1471,   0.1592,
613   0.1514,   0.1263,   0.0879,   0.0421,  -0.0052,
614  -0.0481,  -0.0817,  -0.1028,  -0.1099,  -0.1034,
615  -0.0851,  -0.0584,  -0.0269,   0.0052,   0.0341,
616   0.0567,   0.0709,   0.0756,   0.0709,   0.0582,
617   0.0395,   0.0176,  -0.0047,  -0.0247,  -0.0400,
618  -0.0494,  -0.0521,  -0.0484,  -0.0393,  -0.0262,
619  -0.0112,   0.0040,   0.0175,   0.0278,   0.0341,
620   0.0358,   0.0332,   0.0268,   0.0177,   0.0072,
621  -0.0033,  -0.0126,  -0.0196,  -0.0237,  -0.0247,
622  -0.0226,  -0.0181,  -0.0117,  -0.0045,   0.0026,
623   0.0089,   0.0136,   0.0164,   0.0170,   0.0155,
624   0.0123,
625

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626

627 請按任意鍵繼續 . . .

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