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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, 但提供邊界值條件是 :
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 Matrix_0;
7
8
9 // 已知邊界條件, 其向量為BVal
10 // 邊界值 @t = 4.5
11 double[,] y0 = { { -0.68877 }, { -1.37729 } };
12 // 邊界值 @t = 16.5
13 double[,] y1 = { { 0.11710 }, { 0.23071 } };
14 ReMatrix BVal = (ReMatrix)y0 | y1;
15
16 // 已知陣列 M, K, and C
17 double[,] M = { { 2, 0 }, { 0, 1 } };
18 double[,] K = { { 3, -1 }, { -1, 1 } };
19 double[,] C = { { 0.4, -0.05 }, { -0.05, 0.2 } };
20
21 // 建構系統矩陣A :
22 ReMatrix Mi = ~(ReMatrix)M;
23 Iden iden = new Iden(2);
24 ReMatrix I = iden.Matrix;
25 Zero zero = new Zero(2);
26 ReMatrix O = zero.Matrix;
27 ReMatrix A = ((-1.0 * Mi * C) & (-1.0 * Mi * K)) | (I & O);
28
29 // 系統與狀態係數。
30 // 特徵值矩陣D和特徵向量矩陣Q。
31 EIG eig = new EIG(A);
32 CxMatrix D = eig.CxMatrixD;
33 CxMatrix V = eig.CxVector;
34 CxMatrix Q = eig.CxMatrixQ;
35 // 係數向量d。
36 CxHexp Hexp = new CxHexp(D, Q, 4.5);
37 CxMatrix MatTemp = Hexp.GetCxMatrix;
38 RowSlice rowSlice = new RowSlice(MatTemp, 2, 1);
39 CxMatrix Mat1 = rowSlice.GetCxMatrix;
40
41 Hexp = new CxHexp(D, Q, 16.5);
42 MatTemp = Hexp.GetCxMatrix;
43 rowSlice = new RowSlice(MatTemp, 2, 1);
44 CxMatrix Mat2 = rowSlice.GetCxMatrix;
45
46 // 矩陣Mat1和矩陣Mat2垂直合併。
47 CxMatrix Mat = Mat1 | Mat2;
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48 CxMatrix d = ~Mat * BVal;
49
50 // 列印標題。
51 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", "");
52
53 // 列印系統與狀態參數。
54 Console.Write("\n****{0,5}特徵值V{0,5}***\n{1}\n", "", new PR(V));
55 Console.Write("\n****{0,5}特徵向量矩陣Q{0,5}***\n{1}\n", "", new PR(Q));
56 Console.Write("\n****{0,5}係數向量d{0,5}***\n{1}\n", "", new PR(d));
57
58 double step = 0.5;
59 int iRow = (int)(50 / step + 1);
60 int iCol = M.GetLength(1) + 1;
61 ReMatrix Disp = new ReMatrix(iRow, iCol);
62 ReMatrix Vel = new ReMatrix(iRow, iCol);
63 ReMatrix Acc = new ReMatrix(iRow, iCol);
64
65 for (int i = 0; i != iRow; i++)
66 {
67     double t = step * i;
68
69     Hexp = new CxHexp(D, Q, t);
70     MatTemp = Hexp.GetCxMatrix;
71     ReMatrix yh = (ReMatrix)(MatTemp * d);
72     ReMatrix yhDot = A * yh;
73
74     Acc.Matrix[i, 0] = t;
75     Acc.Matrix[i, 1] = yhDot.Matrix[0, 0];
76     Acc.Matrix[i, 2] = yhDot.Matrix[1, 0];
77
78     Vel.Matrix[i, 0] = t;
79     Vel.Matrix[i, 1] = yh.Matrix[0, 0];
80     Vel.Matrix[i, 2] = yh.Matrix[1, 0];
81
82     Disp.Matrix[i, 0] = t;
83     Disp.Matrix[i, 1] = yh.Matrix[2, 0];
84     Disp.Matrix[i, 2] = yh.Matrix[3, 0];
85 }
86
87 // 列印標題。
88 Console.Write("\n****{0,10}狀{0,5}態{0,5}響{0,5}應{0,10}****\n", "");
89
90 // 列印空間節點之狀態響應(變位, 速度, 和加速)。
91 Console.Write("\n{0,5}***位移反應量***{0,5}\n{0,8}時間(秒)" +
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92     "{0,8} 第0點位移 {0,8} 第1點位移\n\n{1}", "", new PR(Disp));
93 Console.Write("\n{0,5} ***速度反應量***{0,5}\n{0,8} 時間(秒)" +
94     "{0,8} 第0點速度 {0,8} 第1點速度\n\n{1}", "", new PR(Vel));
95 Console.Write("\n***{0,5} 加速度反應量 {0,5}***\n{0,8} 時間(秒)" +
96     "{0,8} 第0點加速度 {0,7} 第1點加速度\n\n{1}", "", new PR(Acc));
97
98 // 列印時間、節點變位、速度、和加速度等序列。
99 Console.Write("\n時間序列\n{0}\n", new PR4(Disp, 0));
100
101 Console.Write("\n第0點變位序列\n{0}\n", new PR4(Disp, 1));
102 Console.Write("\n第1點變位序列\n{0}\n", new PR4(Disp, 2));
103 Console.Write("\n第0點速度序列\n{0}\n", new PR4(Vel, 1));
104 Console.Write("\n第1點速度序列\n{0}\n", new PR4(Vel, 2));
105 Console.Write("\n第0點加速度序列\n{0}\n", new PR4(Acc, 1));
106 Console.Write("\n第1點加速度序列\n{0}\n", new PR4(Acc, 2));
107 Console.Write("\n\n");
108
109
110 /* 輸出結果如下：
111 ****          系      統      與      狀      態      參      數          ****
112
113 ***      特徵值V      ***
114      -0.11666 +      1.40933i
115      -0.11666 -      1.40933i
116      -0.08334 +      0.70221i
117      -0.08334 -      0.70221i
118
119 ***      特徵向量矩陣Q      ***
120      0.57745 +      0.00000i,      0.57745 +      0.00000i,
121      0.25800 +      0.00000i,      0.25800 +      0.00000i
122
123      -0.57707 -      0.01365i,      -0.57707 +      0.01365i,
124      0.51648 -      0.00609i,      0.51648 +      0.00609i
125
126      -0.03369 -      0.40695i,      -0.03369 +      0.40695i,
127      -0.04300 -      0.36231i,      -0.04300 +      0.36231i
128
129      0.02405 +      0.40748i,      0.02405 -      0.40748i,
130      -0.09463 -      0.72428i,      -0.09463 +      0.72428i
131
132 ***      係數向量d      ***
133      0.00484 +      0.00005i
134      0.00484 -      0.00005i
135      -0.01085 +      1.37914i
136      -0.01085 -      1.37914i
137
138 ****          狀      態      響      應          ****

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139
140     ***位移反應量***
141         時間(秒)          第0點位移          第1點位移
142         0.00000          0.99999          2.00000
143         0.50000          0.93966          1.87981
144         1.00000          0.77180          1.54693
145         1.50000          0.52457          1.05824
146         2.00000          0.23387          0.48396
147         2.50000          -0.06169         -0.10151
148         3.00000          -0.32594         -0.62850
149         3.50000          -0.52953         -1.03960
150         4.00000          -0.65311         -1.29529
151         4.50000          -0.68877         -1.37729
152         5.00000          -0.63986         -1.28919
153         5.50000          -0.51942         -1.05458
154         6.00000          -0.34766         -0.71285
155         6.50000          -0.14893         -0.31328
156         7.00000          0.05142          0.09168
157         7.50000          0.22990          0.45312
158         8.00000          0.36732          0.73136
159         8.50000          0.45067          0.90003
160         9.00000          0.47413          0.94810
161         9.50000          0.43939          0.87986
162         10.00000         0.35495          0.71296
163         10.50000         0.23471          0.47520
164         11.00000         0.09591          0.20035
165         11.50000         -0.04325         -0.07623
166         12.00000         -0.16599         -0.32182
167         12.50000         -0.25891         -0.50988
168         13.00000         -0.31336         -0.62268
169         13.50000         -0.32611         -0.65269
170         14.00000         -0.29918         -0.60277
171         14.50000         -0.23909         -0.48509
172         15.00000         -0.15568         -0.31900
173         15.50000         -0.06063         -0.12814
174         16.00000         0.03398          0.06269
175         16.50000         0.11710          0.23071
176         17.00000         0.17986          0.35772
177         17.50000         0.21642          0.43195
178         18.00000         0.22445          0.44889
179         18.50000         0.20516          0.41123
180         19.00000         0.16294          0.32790
181         19.50000         0.10460          0.21245
182         20.00000         0.03842          0.08112
183         20.50000         -0.02705         -0.04933
184         21.00000         -0.08400         -0.16357
185         21.50000         -0.12632         -0.24937
```

186	22.00000	-0.15016	-0.29880
187	22.50000	-0.15422	-0.30886
188	23.00000	-0.13968	-0.28142
189	23.50000	-0.10980	-0.22269
190	24.00000	-0.06937	-0.14214
191	24.50000	-0.02398	-0.05110
192	25.00000	0.02061	0.03872
193	25.50000	0.05924	0.11672
194	26.00000	0.08782	0.17456
195	26.50000	0.10374	0.20700
196	27.00000	0.10610	0.21225
197	27.50000	0.09566	0.19191
198	28.00000	0.07465	0.15047
199	28.50000	0.04640	0.09452
200	29.00000	0.01488	0.03187
201	29.50000	-0.01589	-0.02957
202	30.00000	-0.04228	-0.08261
203	30.50000	-0.06150	-0.12164
204	31.00000	-0.07186	-0.14315
205	31.50000	-0.07284	-0.14595
206	32.00000	-0.06512	-0.13119
207	32.50000	-0.05031	-0.10201
208	33.00000	-0.03074	-0.06303
209	33.50000	-0.00911	-0.01966
210	34.00000	0.01188	0.02257
211	34.50000	0.02980	0.05872
212	35.00000	0.04277	0.08499
213	35.50000	0.04964	0.09905
214	36.00000	0.05008	0.10023
215	36.50000	0.04453	0.08942
216	37.00000	0.03412	0.06889
217	37.50000	0.02048	0.04183
218	38.00000	0.00548	0.01198
219	38.50000	-0.00896	-0.01691
220	39.00000	-0.02117	-0.04149
221	39.50000	-0.02988	-0.05919
222	40.00000	-0.03434	-0.06847
223	40.50000	-0.03436	-0.06888
224	41.00000	-0.03031	-0.06107
225	41.50000	-0.02299	-0.04663
226	42.00000	-0.01354	-0.02779
227	42.50000	-0.00324	-0.00716
228	43.00000	0.00662	0.01266
229	43.50000	0.01491	0.02940
230	44.00000	0.02078	0.04129
231	44.50000	0.02372	0.04733
232	45.00000	0.02361	0.04727

233	45.50000	0.02070	0.04160
234	46.00000	0.01556	0.03146
235	46.50000	0.00898	0.01840
236	47.00000	0.00186	0.00420
237	47.50000	-0.00491	-0.00936
238	48.00000	-0.01056	-0.02074
239	48.50000	-0.01449	-0.02874
240	49.00000	-0.01639	-0.03270
241	49.50000	-0.01619	-0.03246
242	50.00000	-0.01408	-0.02838
243			
244	***速度反應量***		
245	時間(秒)	第0點速度	第1點速度
246	0.00000	0.00000	0.00000
247	0.50000	-0.23582	-0.46889
248	1.00000	-0.42608	-0.84337
249	1.50000	-0.55070	-1.08769
250	2.00000	-0.59906	-1.18431
251	2.50000	-0.57099	-1.13410
252	3.00000	-0.47611	-0.95455
253	3.50000	-0.33176	-0.67656
254	4.00000	-0.15994	-0.34010
255	4.50000	0.01613	0.01085
256	5.00000	0.17508	0.33355
257	5.50000	0.29983	0.59156
258	6.00000	0.37898	0.75872
259	6.50000	0.40741	0.82185
260	7.00000	0.38608	0.78150
261	7.50000	0.32136	0.65089
262	8.00000	0.22395	0.45320
263	8.50000	0.10748	0.21780
264	9.00000	-0.01304	-0.02400
265	9.50000	-0.12303	-0.24298
266	10.00000	-0.21002	-0.41521
267	10.50000	-0.26511	-0.52443
268	11.00000	-0.28395	-0.56304
269	11.50000	-0.26705	-0.53225
270	12.00000	-0.21939	-0.44117
271	12.50000	-0.14936	-0.30512
272	13.00000	-0.06738	-0.14355
273	13.50000	0.01567	0.02252
274	14.00000	0.08984	0.17302
275	14.50000	0.14719	0.29115
276	15.00000	0.18252	0.36524
277	15.50000	0.19360	0.38981
278	16.00000	0.18112	0.36583
279	16.50000	0.14837	0.30012

280	17.00000	0.10070	0.20397
281	17.50000	0.04477	0.09143
282	18.00000	-0.01223	-0.02274
283	18.50000	-0.06344	-0.12486
284	19.00000	-0.10315	-0.20388
285	19.50000	-0.12740	-0.25242
286	20.00000	-0.13445	-0.26726
287	20.50000	-0.12479	-0.24938
288	21.00000	-0.10095	-0.20345
289	21.50000	-0.06701	-0.13708
290	22.00000	-0.02791	-0.05966
291	22.50000	0.01124	0.01879
292	23.00000	0.04580	0.08886
293	23.50000	0.07210	0.14285
294	24.00000	0.08776	0.17553
295	24.50000	0.09184	0.18467
296	25.00000	0.08480	0.17105
297	25.50000	0.06834	0.13814
298	26.00000	0.04509	0.09146
299	26.50000	0.01830	0.03771
300	27.00000	-0.00861	-0.01614
301	27.50000	-0.03241	-0.06369
302	28.00000	-0.05050	-0.09985
303	28.50000	-0.06113	-0.12129
304	29.00000	-0.06360	-0.12667
305	29.50000	-0.05825	-0.11665
306	30.00000	-0.04638	-0.09362
307	30.50000	-0.02995	-0.06133
308	31.00000	-0.01131	-0.02430
309	31.50000	0.00714	0.01270
310	32.00000	0.02321	0.04527
311	32.50000	0.03523	0.06989
312	33.00000	0.04212	0.08422
313	33.50000	0.04350	0.08738
314	34.00000	0.03963	0.07987
315	34.50000	0.03140	0.06347
316	35.00000	0.02010	0.04084
317	35.50000	0.00729	0.01519
318	36.00000	-0.00539	-0.01018
319	36.50000	-0.01643	-0.03228
320	37.00000	-0.02466	-0.04878
321	37.50000	-0.02929	-0.05818
322	38.00000	-0.03005	-0.05995
323	38.50000	-0.02716	-0.05448
324	39.00000	-0.02127	-0.04299
325	39.50000	-0.01332	-0.02731
326	40.00000	-0.00444	-0.00964

327	40.50000	0.00424	0.00779
328	41.00000	0.01170	0.02291
329	41.50000	0.01718	0.03410
330	42.00000	0.02019	0.04035
331	42.50000	0.02057	0.04129
332	43.00000	0.01849	0.03725
333	43.50000	0.01439	0.02910
334	44.00000	0.00891	0.01815
335	44.50000	0.00280	0.00593
336	45.00000	-0.00316	-0.00601
337	45.50000	-0.00828	-0.01627
338	46.00000	-0.01201	-0.02378
339	46.50000	-0.01401	-0.02787
340	47.00000	-0.01418	-0.02833
341	47.50000	-0.01265	-0.02540
342	48.00000	-0.00973	-0.01969
343	48.50000	-0.00589	-0.01210
344	49.00000	-0.00167	-0.00368
345	49.50000	0.00241	0.00452
346	50.00000	0.00587	0.01152
347			
348	*** 加速度反應量	***	
349	時間(秒)	第0點加速度	第1點加速度
350	0.00000	-0.49999	-1.00001
351	0.50000	-0.43414	-0.85816
352	1.00000	-0.32010	-0.62776
353	1.50000	-0.17479	-0.34366
354	2.00000	-0.01862	-0.04318
355	2.50000	0.12763	0.23809
356	3.00000	0.24601	0.46967
357	3.50000	0.32393	0.62880
358	4.00000	0.35550	0.70221
359	4.50000	0.34156	0.68716
360	5.00000	0.28852	0.59137
361	5.50000	0.20667	0.43184
362	6.00000	0.10824	0.23239
363	6.50000	0.00581	0.02035
364	7.00000	-0.08897	-0.17725
365	7.50000	-0.16629	-0.33733
366	8.00000	-0.21877	-0.44348
367	8.50000	-0.24204	-0.48755
368	9.00000	-0.23514	-0.46982
369	9.50000	-0.20063	-0.39802
370	10.00000	-0.14433	-0.28547
371	10.50000	-0.07456	-0.14885
372	11.00000	-0.00098	-0.00603
373	11.50000	0.06687	0.12608

374	12.00000	0.12093	0.23309
375	12.50000	0.15566	0.30453
376	13.00000	0.16859	0.33466
377	13.50000	0.16026	0.32285
378	14.00000	0.13375	0.27348
379	14.50000	0.09393	0.19513
380	15.00000	0.04664	0.09940
381	15.50000	-0.00210	-0.00077
382	16.00000	-0.04670	-0.09282
383	16.50000	-0.08247	-0.16621
384	17.00000	-0.10597	-0.21362
385	17.50000	-0.11533	-0.23157
386	18.00000	-0.11036	-0.22049
387	18.50000	-0.09256	-0.18426
388	19.00000	-0.06493	-0.12934
389	19.50000	-0.03151	-0.06374
390	20.00000	0.00315	0.00403
391	20.50000	0.03464	0.06592
392	21.00000	0.05933	0.11521
393	21.50000	0.07477	0.14711
394	22.00000	0.07992	0.15918
395	22.50000	0.07512	0.15144
396	23.00000	0.06188	0.12625
397	23.50000	0.04251	0.08792
398	24.00000	0.01982	0.04206
399	24.50000	-0.00333	-0.00522
400	25.00000	-0.02425	-0.04808
401	25.50000	-0.04072	-0.08169
402	26.00000	-0.05118	-0.10278
403	26.50000	-0.05483	-0.10988
404	27.00000	-0.05171	-0.10335
405	27.50000	-0.04264	-0.08514
406	28.00000	-0.02913	-0.05838
407	28.50000	-0.01315	-0.02692
408	29.00000	0.00316	0.00517
409	29.50000	0.01778	0.03410
410	30.00000	0.02905	0.05674
411	30.50000	0.03589	0.07091
412	31.00000	0.03786	0.07559
413	31.50000	0.03518	0.07093
414	32.00000	0.02856	0.05819
415	32.50000	0.01915	0.03949
416	33.00000	0.00828	0.01755
417	33.50000	-0.00269	-0.00474
418	34.00000	-0.01247	-0.02468
419	34.50000	-0.02003	-0.04005
420	35.00000	-0.02465	-0.04939

421	35.50000	-0.02602	-0.05208
422	36.00000	-0.02419	-0.04838
423	36.50000	-0.01961	-0.03926
424	37.00000	-0.01303	-0.02624
425	37.50000	-0.00540	-0.01118
426	38.00000	0.00228	0.00399
427	38.50000	0.00906	0.01748
428	39.00000	0.01420	0.02785
429	39.50000	0.01721	0.03411
430	40.00000	0.01792	0.03583
431	40.50000	0.01645	0.03317
432	41.00000	0.01316	0.02677
433	41.50000	0.00859	0.01767
434	42.00000	0.00338	0.00719
435	42.50000	-0.00180	-0.00331
436	43.00000	-0.00636	-0.01257
437	43.50000	-0.00982	-0.01959
438	44.00000	-0.01185	-0.02370
439	44.50000	-0.01232	-0.02466
440	45.00000	-0.01130	-0.02262
441	45.50000	-0.00900	-0.01806
442	46.00000	-0.00580	-0.01174
443	46.50000	-0.00217	-0.00454
444	47.00000	0.00144	0.00262
445	47.50000	0.00458	0.00890
446	48.00000	0.00692	0.01363
447	48.50000	0.00824	0.01638
448	49.00000	0.00847	0.01696
449	49.50000	0.00768	0.01549
450	50.00000	0.00605	0.01229

451

452 時間序列

453	0.0000,	0.5000,	1.0000,	1.5000,	2.0000,
454	2.5000,	3.0000,	3.5000,	4.0000,	4.5000,
455	5.0000,	5.5000,	6.0000,	6.5000,	7.0000,
456	7.5000,	8.0000,	8.5000,	9.0000,	9.5000,
457	10.0000,	10.5000,	11.0000,	11.5000,	12.0000,
458	12.5000,	13.0000,	13.5000,	14.0000,	14.5000,
459	15.0000,	15.5000,	16.0000,	16.5000,	17.0000,
460	17.5000,	18.0000,	18.5000,	19.0000,	19.5000,
461	20.0000,	20.5000,	21.0000,	21.5000,	22.0000,
462	22.5000,	23.0000,	23.5000,	24.0000,	24.5000,
463	25.0000,	25.5000,	26.0000,	26.5000,	27.0000,
464	27.5000,	28.0000,	28.5000,	29.0000,	29.5000,
465	30.0000,	30.5000,	31.0000,	31.5000,	32.0000,
466	32.5000,	33.0000,	33.5000,	34.0000,	34.5000,
467	35.0000,	35.5000,	36.0000,	36.5000,	37.0000,

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468 37.5000, 38.0000, 38.5000, 39.0000, 39.5000,
469 40.0000, 40.5000, 41.0000, 41.5000, 42.0000,
470 42.5000, 43.0000, 43.5000, 44.0000, 44.5000,
471 45.0000, 45.5000, 46.0000, 46.5000, 47.0000,
472 47.5000, 48.0000, 48.5000, 49.0000, 49.5000,
473 50.0000,
474
475
476 第0點變位序列
477 1.0000, 0.9397, 0.7718, 0.5246, 0.2339,
478 -0.0617, -0.3259, -0.5295, -0.6531, -0.6888,
479 -0.6399, -0.5194, -0.3477, -0.1489, 0.0514,
480 0.2299, 0.3673, 0.4507, 0.4741, 0.4394,
481 0.3550, 0.2347, 0.0959, -0.0433, -0.1660,
482 -0.2589, -0.3134, -0.3261, -0.2992, -0.2391,
483 -0.1557, -0.0606, 0.0340, 0.1171, 0.1799,
484 0.2164, 0.2245, 0.2052, 0.1629, 0.1046,
485 0.0384, -0.0271, -0.0840, -0.1263, -0.1502,
486 -0.1542, -0.1397, -0.1098, -0.0694, -0.0240,
487 0.0206, 0.0592, 0.0878, 0.1037, 0.1061,
488 0.0957, 0.0746, 0.0464, 0.0149, -0.0159,
489 -0.0423, -0.0615, -0.0719, -0.0728, -0.0651,
490 -0.0503, -0.0307, -0.0091, 0.0119, 0.0298,
491 0.0428, 0.0496, 0.0501, 0.0445, 0.0341,
492 0.0205, 0.0055, -0.0090, -0.0212, -0.0299,
493 -0.0343, -0.0344, -0.0303, -0.0230, -0.0135,
494 -0.0032, 0.0066, 0.0149, 0.0208, 0.0237,
495 0.0236, 0.0207, 0.0156, 0.0090, 0.0019,
496 -0.0049, -0.0106, -0.0145, -0.0164, -0.0162,
497 -0.0141,
498
499
500 第1點變位序列
501 2.0000, 1.8798, 1.5469, 1.0582, 0.4840,
502 -0.1015, -0.6285, -1.0396, -1.2953, -1.3773,
503 -1.2892, -1.0546, -0.7128, -0.3133, 0.0917,
504 0.4531, 0.7314, 0.9000, 0.9481, 0.8799,
505 0.7130, 0.4752, 0.2004, -0.0762, -0.3218,
506 -0.5099, -0.6227, -0.6527, -0.6028, -0.4851,
507 -0.3190, -0.1281, 0.0627, 0.2307, 0.3577,
508 0.4319, 0.4489, 0.4112, 0.3279, 0.2125,
509 0.0811, -0.0493, -0.1636, -0.2494, -0.2988,
510 -0.3089, -0.2814, -0.2227, -0.1421, -0.0511,
511 0.0387, 0.1167, 0.1746, 0.2070, 0.2123,
512 0.1919, 0.1505, 0.0945, 0.0319, -0.0296,
513 -0.0826, -0.1216, -0.1431, -0.1460, -0.1312,
514 -0.1020, -0.0630, -0.0197, 0.0226, 0.0587,

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515	0.0850,	0.0991,	0.1002,	0.0894,	0.0689,
516	0.0418,	0.0120,	-0.0169,	-0.0415,	-0.0592,
517	-0.0685,	-0.0689,	-0.0611,	-0.0466,	-0.0278,
518	-0.0072,	0.0127,	0.0294,	0.0413,	0.0473,
519	0.0473,	0.0416,	0.0315,	0.0184,	0.0042,
520	-0.0094,	-0.0207,	-0.0287,	-0.0327,	-0.0325,
521	-0.0284,				
522					
523	第0點速度序列				
524	0.0000,	-0.2358,	-0.4261,	-0.5507,	-0.5991,
525	-0.5710,	-0.4761,	-0.3318,	-0.1599,	0.0161,
526	0.1751,	0.2998,	0.3790,	0.4074,	0.3861,
527	0.3214,	0.2239,	0.1075,	-0.0130,	-0.1230,
528	-0.2100,	-0.2651,	-0.2839,	-0.2671,	-0.2194,
529	-0.1494,	-0.0674,	0.0157,	0.0898,	0.1472,
530	0.1825,	0.1936,	0.1811,	0.1484,	0.1007,
531	0.0448,	-0.0122,	-0.0634,	-0.1031,	-0.1274,
532	-0.1345,	-0.1248,	-0.1010,	-0.0670,	-0.0279,
533	0.0112,	0.0458,	0.0721,	0.0878,	0.0918,
534	0.0848,	0.0683,	0.0451,	0.0183,	-0.0086,
535	-0.0324,	-0.0505,	-0.0611,	-0.0636,	-0.0583,
536	-0.0464,	-0.0299,	-0.0113,	0.0071,	0.0232,
537	0.0352,	0.0421,	0.0435,	0.0396,	0.0314,
538	0.0201,	0.0073,	-0.0054,	-0.0164,	-0.0247,
539	-0.0293,	-0.0300,	-0.0272,	-0.0213,	-0.0133,
540	-0.0044,	0.0042,	0.0117,	0.0172,	0.0202,
541	0.0206,	0.0185,	0.0144,	0.0089,	0.0028,
542	-0.0032,	-0.0083,	-0.0120,	-0.0140,	-0.0142,
543	-0.0126,	-0.0097,	-0.0059,	-0.0017,	0.0024,
544	0.0059,				
545					
546					
547	第1點速度序列				
548	0.0000,	-0.4689,	-0.8434,	-1.0877,	-1.1843,
549	-1.1341,	-0.9545,	-0.6766,	-0.3401,	0.0108,
550	0.3336,	0.5916,	0.7587,	0.8218,	0.7815,
551	0.6509,	0.4532,	0.2178,	-0.0240,	-0.2430,
552	-0.4152,	-0.5244,	-0.5630,	-0.5323,	-0.4412,
553	-0.3051,	-0.1435,	0.0225,	0.1730,	0.2911,
554	0.3652,	0.3898,	0.3658,	0.3001,	0.2040,
555	0.0914,	-0.0227,	-0.1249,	-0.2039,	-0.2524,
556	-0.2673,	-0.2494,	-0.2035,	-0.1371,	-0.0597,
557	0.0188,	0.0889,	0.1428,	0.1755,	0.1847,
558	0.1710,	0.1381,	0.0915,	0.0377,	-0.0161,
559	-0.0637,	-0.0999,	-0.1213,	-0.1267,	-0.1166,
560	-0.0936,	-0.0613,	-0.0243,	0.0127,	0.0453,
561	0.0699,	0.0842,	0.0874,	0.0799,	0.0635,

562	0.0408,	0.0152,	-0.0102,	-0.0323,	-0.0488,
563	-0.0582,	-0.0599,	-0.0545,	-0.0430,	-0.0273,
564	-0.0096,	0.0078,	0.0229,	0.0341,	0.0403,
565	0.0413,	0.0372,	0.0291,	0.0181,	0.0059,
566	-0.0060,	-0.0163,	-0.0238,	-0.0279,	-0.0283,
567	-0.0254,	-0.0197,	-0.0121,	-0.0037,	0.0045,
568	0.0115,				
569					
570					
571	第0點加速度序列				
572	-0.5000,	-0.4341,	-0.3201,	-0.1748,	-0.0186,
573	0.1276,	0.2460,	0.3239,	0.3555,	0.3416,
574	0.2885,	0.2067,	0.1082,	0.0058,	-0.0890,
575	-0.1663,	-0.2188,	-0.2420,	-0.2351,	-0.2006,
576	-0.1443,	-0.0746,	-0.0010,	0.0669,	0.1209,
577	0.1557,	0.1686,	0.1603,	0.1337,	0.0939,
578	0.0466,	-0.0021,	-0.0467,	-0.0825,	-0.1060,
579	-0.1153,	-0.1104,	-0.0926,	-0.0649,	-0.0315,
580	0.0031,	0.0346,	0.0593,	0.0748,	0.0799,
581	0.0751,	0.0619,	0.0425,	0.0198,	-0.0033,
582	-0.0242,	-0.0407,	-0.0512,	-0.0548,	-0.0517,
583	-0.0426,	-0.0291,	-0.0131,	0.0032,	0.0178,
584	0.0290,	0.0359,	0.0379,	0.0352,	0.0286,
585	0.0192,	0.0083,	-0.0027,	-0.0125,	-0.0200,
586	-0.0247,	-0.0260,	-0.0242,	-0.0196,	-0.0130,
587	-0.0054,	0.0023,	0.0091,	0.0142,	0.0172,
588	0.0179,	0.0164,	0.0132,	0.0086,	0.0034,
589	-0.0018,	-0.0064,	-0.0098,	-0.0119,	-0.0123,
590	-0.0113,	-0.0090,	-0.0058,	-0.0022,	0.0014,
591	0.0046,	0.0069,	0.0082,	0.0085,	0.0077,
592	0.0060,				
593					
594	第1點加速度序列				
595	-1.0000,	-0.8582,	-0.6278,	-0.3437,	-0.0432,
596	0.2381,	0.4697,	0.6288,	0.7022,	0.6872,
597	0.5914,	0.4318,	0.2324,	0.0204,	-0.1773,
598	-0.3373,	-0.4435,	-0.4875,	-0.4698,	-0.3980,
599	-0.2855,	-0.1489,	-0.0060,	0.1261,	0.2331,
600	0.3045,	0.3347,	0.3229,	0.2735,	0.1951,
601	0.0994,	-0.0008,	-0.0928,	-0.1662,	-0.2136,
602	-0.2316,	-0.2205,	-0.1843,	-0.1293,	-0.0637,
603	0.0040,	0.0659,	0.1152,	0.1471,	0.1592,
604	0.1514,	0.1263,	0.0879,	0.0421,	-0.0052,
605	-0.0481,	-0.0817,	-0.1028,	-0.1099,	-0.1034,
606	-0.0851,	-0.0584,	-0.0269,	0.0052,	0.0341,
607	0.0567,	0.0709,	0.0756,	0.0709,	0.0582,
608	0.0395,	0.0176,	-0.0047,	-0.0247,	-0.0400,

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609    -0.0494,    -0.0521,    -0.0484,    -0.0393,    -0.0262,
610    -0.0112,     0.0040,     0.0175,     0.0278,     0.0341,
611     0.0358,     0.0332,     0.0268,     0.0177,     0.0072,
612    -0.0033,    -0.0126,    -0.0196,    -0.0237,    -0.0247,
613    -0.0226,    -0.0181,    -0.0117,    -0.0045,     0.0026,
614     0.0089,     0.0136,     0.0164,     0.0170,     0.0155,
615     0.0123,
616
617
618 請按任意鍵繼續 . . .
619 */
620
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