

```
1 // J. L. Humar, "Dynamics of Structures", 第502-504頁
2 using System;
3 using Matrix_0;
4
5 namespace ConsoleApp6J
6 {
7     class Program
8     {
9         static void Main(string[] args)
10         {
11             double[,] M = { { 2, 0 }, { 0, 1 } };
12             double[,] K = { { 3, -1 }, { -1, 1 } };
13             double[,] C = { { 0.4, -0.05 }, { -0.05, 0.2 } };
14             // t=0時, 第0點和第1點, 速度和位移之初始值。
15             double[,] y0Start = { { 0 }, { 0 }, { 1 }, { 2 } };
16
17             ReMatrix y0 = new ReMatrix(y0Start);
18             MKCMatrix MKC = new MKCMatrix(M, K, C);
19             ReMatrix A = new ReMatrix(MKC.Matrix);
20
21             EIG eig = new EIG(A);
22             CxMatrix D = eig.CxMatrixD;
23             CxMatrix V = eig.CxVector;
24             CxMatrix Q = eig.CxMatrixQ;
25
26             CxToHexp Hexp = new CxToHexp(D, Q, 0);
27             CxMatrix MatTemp = Hexp.GetCxMatrix;
28             CxMatrix d = ~MatTemp * y0;
29
30             // 列印系統與狀態參數。
31             Console.WriteLine("\n***{0,5} 系{0,5} 統{0,5} 與{0,5} 狀{0,5} 態{0,5} 參  ➤
32                 {0,5} 數{0,5} ***\n", "");
33
34             Console.WriteLine("\n***{0,5} 特徵值V{0,5} ***\n{1}\n", "", new PR  ➤
35                 (V));
36
37             Console.WriteLine("\n***{0,5} 特徵向量矩陣Q{0,5} ***\n{1}\n", "", new PR  ➤
38                 PR(Q));
39
40             Console.WriteLine("\n***{0,5} 係數向量d{0,5} ***\n{1}\n", "", new PR  ➤
41                 (d));
42
43             double step = 0.5;
44             int iRow = (int)(50 / step + 1);
45             int iCol = M.GetLength(1) + 1;
46             ReMatrix Disp = new ReMatrix(iRow, iCol);
47             ReMatrix Vel = new ReMatrix(iRow, iCol);
```

```
42     ReMatrix Acc = new ReMatrix(iRow, iCol);
43
44     for (int i = 0; i != iRow; i++)
45     {
46         double t = step * i;
47
48         Hexp = new CxToHexp(D, Q, t);
49         MatTemp = Hexp.GetCxMatrix;
50         ReMatrix yh_Re = (ReMatrix) (MatTemp * d);
51         ReMatrix yhDot_Re = A * yh_Re;
52
53         Acc.Matrix[i, 0] = t;
54         Acc.Matrix[i, 1] = yhDot_Re.Matrix[0, 0];
55         Acc.Matrix[i, 2] = yhDot_Re.Matrix[1, 0];
56
57         Vel.Matrix[i, 0] = t;
58         Vel.Matrix[i, 1] = yh_Re.Matrix[0, 0];
59         Vel.Matrix[i, 2] = yh_Re.Matrix[1, 0];
60
61         Disp.Matrix[i, 0] = t;
62         Disp.Matrix[i, 1] = yh_Re.Matrix[2, 0];
63         Disp.Matrix[i, 2] = yh_Re.Matrix[3, 0];
64     }
65
66     // 列印標題。
67     Console.Write("\n****{0, 10} 狀{0, 5} 態{0, 5} 響{0, 5} 應{0, 10} ****\n",
68         "");
69
70     // 列印空間節點之狀態響應(變位, 速度, 和加速)。
71     Console.Write("\n{0, 5} ***位移反應量***{0, 5} \n{0, 8} 時間(秒)" +
72         "{0, 8} 第0點位移{0, 8} 第1點位移\n\n{1}", "", new PR(Disp));
73     Console.Write("\n{0, 5} ***速度反應量***{0, 5} \n{0, 8} 時間(秒)" +
74         "{0, 8} 第0點速度{0, 8} 第1點速度\n\n{1}", "", new PR(Vel));
75     Console.Write("\n***{0, 5} 加速度反應量{0, 5} ***\n{0, 8} 時間(秒)" +
76         "{0, 8} 第0點加速度{0, 7} 第1點加速度\n\n{1}", "", new PR(Acc));
77
78     // 列印時間、節點變位、速度、和加速度等序列。
79     Console.Write("\n時間序列\n{0}\n", new PR4(Disp, 0));
80     Console.Write("\n第0點變位序列\n{0}\n", new PR4(Disp, 1));
81     Console.Write("\n第1點變位序列\n{0}\n", new PR4(Disp, 2));
82     Console.Write("\n第0點速度序列\n{0}\n", new PR4(Vel, 1));
83     Console.Write("\n第1點速度序列\n{0}\n", new PR4(Vel, 2));
84     Console.Write("\n第0點加速度序列\n{0}\n", new PR4(Acc, 1));
85     Console.Write("\n第1點加速度序列\n{0}\n", new PR4(Acc, 2));
86     Console.Write("\n\n");
```

```

86
87     }
88 }
89 }
90 /*
91 ****      系      統      與      狀      態      參      數      ****
92
93 ***      特徵值V      ***
94     -0.11666 +   1.40933i
95     -0.11666 -   1.40933i
96     -0.08334 +   0.70221i
97     -0.08334 -   0.70221i
98
99 ***      特徵向量矩陣Q      ***
100     0.57745 +   0.00000i,   0.57745 +   0.00000i,
101     0.25800 +   0.00000i,   0.25800 +   0.00000i
102
103     -0.57707 -   0.01365i,  -0.57707 +   0.01365i,
104     0.51648 -   0.00609i,   0.51648 +   0.00609i
105
106     -0.03369 -   0.40695i,  -0.03369 +   0.40695i,
107     -0.04300 -   0.36231i,  -0.04300 +   0.36231i
108
109     0.02405 +   0.40748i,   0.02405 -   0.40748i,
110     -0.09463 -   0.72428i,  -0.09463 +   0.72428i
111
112 ***      係數向量d      ***
113     0.00484 +   0.00006i
114     0.00484 -   0.00006i
115     -0.01084 +   1.37914i
116     -0.01084 -   1.37914i
117
118 ****      狀      態      響      應      ****
119
120     ***位移反應量***
121     時間(秒)      第0點位移      第1點位移
122     0.00000      1.00000      2.00000
123     0.50000      0.93967      1.87981
124     1.00000      0.77181      1.54694
125     1.50000      0.52458      1.05825
126     2.00000      0.23388      0.48398
127     2.50000      -0.06169     -0.10150
128     3.00000      -0.32593     -0.62850
129     3.50000      -0.52952     -1.03960
130     4.00000      -0.65311     -1.29530

```

---

131	4.50000	-0.68877	-1.37729
132	5.00000	-0.63986	-1.28919
133	5.50000	-0.51942	-1.05458
134	6.00000	-0.34767	-0.71285
135	6.50000	-0.14893	-0.31328
136	7.00000	0.05142	0.09168
137	7.50000	0.22989	0.45312
138	8.00000	0.36732	0.73135
139	8.50000	0.45067	0.90002
140	9.00000	0.47413	0.94810
141	9.50000	0.43939	0.87986
142	10.00000	0.35495	0.71296
143	10.50000	0.23471	0.47520
144	11.00000	0.09592	0.20036
145	11.50000	-0.04325	-0.07622
146	12.00000	-0.16599	-0.32181
147	12.50000	-0.25890	-0.50987
148	13.00000	-0.31336	-0.62267
149	13.50000	-0.32611	-0.65268
150	14.00000	-0.29918	-0.60277
151	14.50000	-0.23909	-0.48509
152	15.00000	-0.15568	-0.31900
153	15.50000	-0.06063	-0.12814
154	16.00000	0.03398	0.06269
155	16.50000	0.11710	0.23071
156	17.00000	0.17986	0.35772
157	17.50000	0.21642	0.43194
158	18.00000	0.22445	0.44888
159	18.50000	0.20516	0.41122
160	19.00000	0.16294	0.32789
161	19.50000	0.10460	0.21245
162	20.00000	0.03842	0.08112
163	20.50000	-0.02705	-0.04933
164	21.00000	-0.08400	-0.16356
165	21.50000	-0.12632	-0.24936
166	22.00000	-0.15015	-0.29880
167	22.50000	-0.15422	-0.30886
168	23.00000	-0.13968	-0.28142
169	23.50000	-0.10980	-0.22269
170	24.00000	-0.06937	-0.14214
171	24.50000	-0.02398	-0.05110
172	25.00000	0.02061	0.03872
173	25.50000	0.05924	0.11672
174	26.00000	0.08782	0.17456
175	26.50000	0.10374	0.20699

---

176	27.00000	0.10610	0.21225
177	27.50000	0.09565	0.19191
178	28.00000	0.07464	0.15047
179	28.50000	0.04640	0.09452
180	29.00000	0.01488	0.03187
181	29.50000	-0.01588	-0.02957
182	30.00000	-0.04228	-0.08260
183	30.50000	-0.06150	-0.12164
184	31.00000	-0.07185	-0.14314
185	31.50000	-0.07284	-0.14595
186	32.00000	-0.06511	-0.13119
187	32.50000	-0.05031	-0.10201
188	33.00000	-0.03074	-0.06303
189	33.50000	-0.00911	-0.01966
190	34.00000	0.01188	0.02256
191	34.50000	0.02980	0.05872
192	35.00000	0.04277	0.08499
193	35.50000	0.04964	0.09905
194	36.00000	0.05008	0.10023
195	36.50000	0.04453	0.08942
196	37.00000	0.03412	0.06888
197	37.50000	0.02048	0.04183
198	38.00000	0.00548	0.01198
199	38.50000	-0.00896	-0.01691
200	39.00000	-0.02117	-0.04149
201	39.50000	-0.02988	-0.05919
202	40.00000	-0.03434	-0.06847
203	40.50000	-0.03436	-0.06887
204	41.00000	-0.03031	-0.06107
205	41.50000	-0.02299	-0.04663
206	42.00000	-0.01354	-0.02779
207	42.50000	-0.00324	-0.00716
208	43.00000	0.00662	0.01266
209	43.50000	0.01491	0.02940
210	44.00000	0.02078	0.04129
211	44.50000	0.02372	0.04733
212	45.00000	0.02361	0.04727
213	45.50000	0.02070	0.04160
214	46.00000	0.01556	0.03146
215	46.50000	0.00898	0.01840
216	47.00000	0.00186	0.00420
217	47.50000	-0.00491	-0.00936
218	48.00000	-0.01056	-0.02073
219	48.50000	-0.01449	-0.02874
220	49.00000	-0.01639	-0.03270

221	49.50000	-0.01619	-0.03246
222	50.00000	-0.01408	-0.02838
223			
224	***速度反應量***		
225	時間(秒)	第0點速度	第1點速度
226	0.00000	0.00000	0.00000
227	0.50000	-0.23583	-0.46888
228	1.00000	-0.42608	-0.84336
229	1.50000	-0.55070	-1.08768
230	2.00000	-0.59906	-1.18431
231	2.50000	-0.57099	-1.13411
232	3.00000	-0.47610	-0.95456
233	3.50000	-0.33176	-0.67657
234	4.00000	-0.15994	-0.34010
235	4.50000	0.01612	0.01084
236	5.00000	0.17508	0.33355
237	5.50000	0.29982	0.59156
238	6.00000	0.37898	0.75872
239	6.50000	0.40741	0.82185
240	7.00000	0.38608	0.78150
241	7.50000	0.32137	0.65088
242	8.00000	0.22395	0.45320
243	8.50000	0.10749	0.21780
244	9.00000	-0.01304	-0.02400
245	9.50000	-0.12303	-0.24297
246	10.00000	-0.21002	-0.41521
247	10.50000	-0.26511	-0.52442
248	11.00000	-0.28395	-0.56304
249	11.50000	-0.26705	-0.53225
250	12.00000	-0.21939	-0.44117
251	12.50000	-0.14936	-0.30512
252	13.00000	-0.06738	-0.14355
253	13.50000	0.01567	0.02252
254	14.00000	0.08983	0.17301
255	14.50000	0.14719	0.29115
256	15.00000	0.18252	0.36524
257	15.50000	0.19360	0.38981
258	16.00000	0.18112	0.36583
259	16.50000	0.14837	0.30011
260	17.00000	0.10070	0.20397
261	17.50000	0.04477	0.09143
262	18.00000	-0.01223	-0.02274
263	18.50000	-0.06344	-0.12486
264	19.00000	-0.10315	-0.20388
265	19.50000	-0.12740	-0.25241

---

266	20.00000	-0.13445	-0.26726
267	20.50000	-0.12479	-0.24937
268	21.00000	-0.10095	-0.20345
269	21.50000	-0.06701	-0.13708
270	22.00000	-0.02791	-0.05966
271	22.50000	0.01124	0.01879
272	23.00000	0.04580	0.08886
273	23.50000	0.07210	0.14284
274	24.00000	0.08776	0.17553
275	24.50000	0.09184	0.18467
276	25.00000	0.08480	0.17105
277	25.50000	0.06834	0.13814
278	26.00000	0.04509	0.09146
279	26.50000	0.01830	0.03771
280	27.00000	-0.00861	-0.01614
281	27.50000	-0.03241	-0.06369
282	28.00000	-0.05050	-0.09985
283	28.50000	-0.06113	-0.12129
284	29.00000	-0.06359	-0.12667
285	29.50000	-0.05825	-0.11665
286	30.00000	-0.04638	-0.09362
287	30.50000	-0.02995	-0.06133
288	31.00000	-0.01131	-0.02430
289	31.50000	0.00714	0.01269
290	32.00000	0.02321	0.04527
291	32.50000	0.03523	0.06988
292	33.00000	0.04212	0.08422
293	33.50000	0.04350	0.08738
294	34.00000	0.03963	0.07987
295	34.50000	0.03140	0.06346
296	35.00000	0.02010	0.04084
297	35.50000	0.00729	0.01519
298	36.00000	-0.00538	-0.01018
299	36.50000	-0.01643	-0.03228
300	37.00000	-0.02466	-0.04878
301	37.50000	-0.02929	-0.05818
302	38.00000	-0.03005	-0.05995
303	38.50000	-0.02716	-0.05447
304	39.00000	-0.02127	-0.04299
305	39.50000	-0.01332	-0.02731
306	40.00000	-0.00444	-0.00964
307	40.50000	0.00424	0.00779
308	41.00000	0.01170	0.02291
309	41.50000	0.01718	0.03410
310	42.00000	0.02019	0.04035

311	42.50000	0.02057	0.04129
312	43.00000	0.01849	0.03725
313	43.50000	0.01439	0.02910
314	44.00000	0.00891	0.01815
315	44.50000	0.00280	0.00593
316	45.00000	-0.00316	-0.00601
317	45.50000	-0.00828	-0.01627
318	46.00000	-0.01201	-0.02378
319	46.50000	-0.01401	-0.02787
320	47.00000	-0.01418	-0.02833
321	47.50000	-0.01265	-0.02540
322	48.00000	-0.00973	-0.01969
323	48.50000	-0.00589	-0.01210
324	49.00000	-0.00167	-0.00368
325	49.50000	0.00241	0.00452
326	50.00000	0.00587	0.01152
327			
328	*** 加速度反應量	***	
329	時間(秒)	第0點加速度	第1點加速度
330	0.00000	-0.50000	-1.00000
331	0.50000	-0.43415	-0.85816
332	1.00000	-0.32011	-0.62777
333	1.50000	-0.17479	-0.34367
334	2.00000	-0.01862	-0.04319
335	2.50000	0.12763	0.23808
336	3.00000	0.24601	0.46967
337	3.50000	0.32393	0.62880
338	4.00000	0.35550	0.70221
339	4.50000	0.34155	0.68716
340	5.00000	0.28851	0.59138
341	5.50000	0.20667	0.43184
342	6.00000	0.10825	0.23239
343	6.50000	0.00582	0.02035
344	7.00000	-0.08897	-0.17726
345	7.50000	-0.16629	-0.33733
346	8.00000	-0.21877	-0.44347
347	8.50000	-0.24204	-0.48754
348	9.00000	-0.23514	-0.46982
349	9.50000	-0.20063	-0.39802
350	10.00000	-0.14433	-0.28547
351	10.50000	-0.07456	-0.14886
352	11.00000	-0.00098	-0.00603
353	11.50000	0.06687	0.12607
354	12.00000	0.12093	0.23309
355	12.50000	0.15566	0.30453



---

356	13.00000	0.16859	0.33466
357	13.50000	0.16025	0.32285
358	14.00000	0.13375	0.27348
359	14.50000	0.09393	0.19513
360	15.00000	0.04665	0.09940
361	15.50000	-0.00210	-0.00077
362	16.00000	-0.04670	-0.09282
363	16.50000	-0.08247	-0.16621
364	17.00000	-0.10597	-0.21362
365	17.50000	-0.11533	-0.23157
366	18.00000	-0.11036	-0.22049
367	18.50000	-0.09256	-0.18426
368	19.00000	-0.06493	-0.12934
369	19.50000	-0.03151	-0.06374
370	20.00000	0.00315	0.00402
371	20.50000	0.03464	0.06591
372	21.00000	0.05933	0.11521
373	21.50000	0.07477	0.14711
374	22.00000	0.07992	0.15918
375	22.50000	0.07512	0.15144
376	23.00000	0.06188	0.12625
377	23.50000	0.04251	0.08792
378	24.00000	0.01982	0.04206
379	24.50000	-0.00333	-0.00522
380	25.00000	-0.02424	-0.04808
381	25.50000	-0.04072	-0.08169
382	26.00000	-0.05118	-0.10278
383	26.50000	-0.05483	-0.10988
384	27.00000	-0.05171	-0.10335
385	27.50000	-0.04264	-0.08514
386	28.00000	-0.02913	-0.05838
387	28.50000	-0.01315	-0.02692
388	29.00000	0.00316	0.00517
389	29.50000	0.01778	0.03410
390	30.00000	0.02905	0.05673
391	30.50000	0.03589	0.07091
392	31.00000	0.03786	0.07559
393	31.50000	0.03517	0.07093
394	32.00000	0.02856	0.05818
395	32.50000	0.01915	0.03949
396	33.00000	0.00828	0.01755
397	33.50000	-0.00269	-0.00474
398	34.00000	-0.01247	-0.02468
399	34.50000	-0.02003	-0.04005
400	35.00000	-0.02465	-0.04938

401	35.50000	-0.02602	-0.05208
402	36.00000	-0.02418	-0.04838
403	36.50000	-0.01961	-0.03926
404	37.00000	-0.01303	-0.02624
405	37.50000	-0.00540	-0.01118
406	38.00000	0.00228	0.00399
407	38.50000	0.00906	0.01748
408	39.00000	0.01419	0.02785
409	39.50000	0.01721	0.03411
410	40.00000	0.01792	0.03583
411	40.50000	0.01645	0.03317
412	41.00000	0.01316	0.02677
413	41.50000	0.00859	0.01767
414	42.00000	0.00338	0.00719
415	42.50000	-0.00180	-0.00331
416	43.00000	-0.00636	-0.01257
417	43.50000	-0.00982	-0.01959
418	44.00000	-0.01185	-0.02370
419	44.50000	-0.01232	-0.02466
420	45.00000	-0.01129	-0.02262
421	45.50000	-0.00900	-0.01806
422	46.00000	-0.00580	-0.01174
423	46.50000	-0.00217	-0.00454
424	47.00000	0.00144	0.00262
425	47.50000	0.00458	0.00890
426	48.00000	0.00692	0.01363
427	48.50000	0.00824	0.01637
428	49.00000	0.00847	0.01696
429	49.50000	0.00768	0.01549
430	50.00000	0.00605	0.01229

431

432 時間序列

433	0.0000,	0.5000,	1.0000,	1.5000,	2.0000,
434	2.5000,	3.0000,	3.5000,	4.0000,	4.5000,
435	5.0000,	5.5000,	6.0000,	6.5000,	7.0000,
436	7.5000,	8.0000,	8.5000,	9.0000,	9.5000,
437	10.0000,	10.5000,	11.0000,	11.5000,	12.0000,
438	12.5000,	13.0000,	13.5000,	14.0000,	14.5000,
439	15.0000,	15.5000,	16.0000,	16.5000,	17.0000,
440	17.5000,	18.0000,	18.5000,	19.0000,	19.5000,
441	20.0000,	20.5000,	21.0000,	21.5000,	22.0000,
442	22.5000,	23.0000,	23.5000,	24.0000,	24.5000,
443	25.0000,	25.5000,	26.0000,	26.5000,	27.0000,
444	27.5000,	28.0000,	28.5000,	29.0000,	29.5000,
445	30.0000,	30.5000,	31.0000,	31.5000,	32.0000,

```
446 32.5000, 33.0000, 33.5000, 34.0000, 34.5000,  
447 35.0000, 35.5000, 36.0000, 36.5000, 37.0000,  
448 37.5000, 38.0000, 38.5000, 39.0000, 39.5000,  
449 40.0000, 40.5000, 41.0000, 41.5000, 42.0000,  
450 42.5000, 43.0000, 43.5000, 44.0000, 44.5000,  
451 45.0000, 45.5000, 46.0000, 46.5000, 47.0000,  
452 47.5000, 48.0000, 48.5000, 49.0000, 49.5000,  
453 50.0000,
```

```
454
```

```
455 第0點變位序列
```

```
456 1.0000, 0.9397, 0.7718, 0.5246, 0.2339,  
457 -0.0617, -0.3259, -0.5295, -0.6531, -0.6888,  
458 -0.6399, -0.5194, -0.3477, -0.1489, 0.0514,  
459 0.2299, 0.3673, 0.4507, 0.4741, 0.4394,  
460 0.3550, 0.2347, 0.0959, -0.0433, -0.1660,  
461 -0.2589, -0.3134, -0.3261, -0.2992, -0.2391,  
462 -0.1557, -0.0606, 0.0340, 0.1171, 0.1799,  
463 0.2164, 0.2245, 0.2052, 0.1629, 0.1046,  
464 0.0384, -0.0271, -0.0840, -0.1263, -0.1502,  
465 -0.1542, -0.1397, -0.1098, -0.0694, -0.0240,  
466 0.0206, 0.0592, 0.0878, 0.1037, 0.1061,  
467 0.0957, 0.0746, 0.0464, 0.0149, -0.0159,  
468 -0.0423, -0.0615, -0.0719, -0.0728, -0.0651,  
469 -0.0503, -0.0307, -0.0091, 0.0119, 0.0298,  
470 0.0428, 0.0496, 0.0501, 0.0445, 0.0341,  
471 0.0205, 0.0055, -0.0090, -0.0212, -0.0299,  
472 -0.0343, -0.0344, -0.0303, -0.0230, -0.0135,  
473 -0.0032, 0.0066, 0.0149, 0.0208, 0.0237,  
474 0.0236, 0.0207, 0.0156, 0.0090, 0.0019,  
475 -0.0049, -0.0106, -0.0145, -0.0164, -0.0162,  
476 -0.0141,
```

```
477
```

```
478 第1點變位序列
```

```
479 2.0000, 1.8798, 1.5469, 1.0582, 0.4840,  
480 -0.1015, -0.6285, -1.0396, -1.2953, -1.3773,  
481 -1.2892, -1.0546, -0.7129, -0.3133, 0.0917,  
482 0.4531, 0.7314, 0.9000, 0.9481, 0.8799,  
483 0.7130, 0.4752, 0.2004, -0.0762, -0.3218,  
484 -0.5099, -0.6227, -0.6527, -0.6028, -0.4851,  
485 -0.3190, -0.1281, 0.0627, 0.2307, 0.3577,  
486 0.4319, 0.4489, 0.4112, 0.3279, 0.2125,  
487 0.0811, -0.0493, -0.1636, -0.2494, -0.2988,  
488 -0.3089, -0.2814, -0.2227, -0.1421, -0.0511,  
489 0.0387, 0.1167, 0.1746, 0.2070, 0.2122,  
490 0.1919, 0.1505, 0.0945, 0.0319, -0.0296,
```

```
491    -0.0826,    -0.1216,    -0.1431,    -0.1459,    -0.1312,
492    -0.1020,    -0.0630,    -0.0197,     0.0226,     0.0587,
493     0.0850,     0.0991,     0.1002,     0.0894,     0.0689,
494     0.0418,     0.0120,    -0.0169,    -0.0415,    -0.0592,
495    -0.0685,    -0.0689,    -0.0611,    -0.0466,    -0.0278,
496    -0.0072,     0.0127,     0.0294,     0.0413,     0.0473,
497     0.0473,     0.0416,     0.0315,     0.0184,     0.0042,
498    -0.0094,    -0.0207,    -0.0287,    -0.0327,    -0.0325,
499    -0.0284,
```

```
500
```

```
501 第0點速度序列
```

```
502     0.0000,    -0.2358,    -0.4261,    -0.5507,    -0.5991,
503    -0.5710,    -0.4761,    -0.3318,    -0.1599,     0.0161,
504     0.1751,     0.2998,     0.3790,     0.4074,     0.3861,
505     0.3214,     0.2240,     0.1075,    -0.0130,    -0.1230,
506    -0.2100,    -0.2651,    -0.2839,    -0.2671,    -0.2194,
507    -0.1494,    -0.0674,     0.0157,     0.0898,     0.1472,
508     0.1825,     0.1936,     0.1811,     0.1484,     0.1007,
509     0.0448,    -0.0122,    -0.0634,    -0.1031,    -0.1274,
510    -0.1344,    -0.1248,    -0.1010,    -0.0670,    -0.0279,
511     0.0112,     0.0458,     0.0721,     0.0878,     0.0918,
512     0.0848,     0.0683,     0.0451,     0.0183,    -0.0086,
513    -0.0324,    -0.0505,    -0.0611,    -0.0636,    -0.0583,
514    -0.0464,    -0.0299,    -0.0113,     0.0071,     0.0232,
515     0.0352,     0.0421,     0.0435,     0.0396,     0.0314,
516     0.0201,     0.0073,    -0.0054,    -0.0164,    -0.0247,
517    -0.0293,    -0.0300,    -0.0272,    -0.0213,    -0.0133,
518    -0.0044,     0.0042,     0.0117,     0.0172,     0.0202,
519     0.0206,     0.0185,     0.0144,     0.0089,     0.0028,
520    -0.0032,    -0.0083,    -0.0120,    -0.0140,    -0.0142,
521    -0.0126,    -0.0097,    -0.0059,    -0.0017,     0.0024,
522     0.0059,
```

```
523
```

```
524 第1點速度序列
```

```
525     0.0000,    -0.4689,    -0.8434,    -1.0877,    -1.1843,
526    -1.1341,    -0.9546,    -0.6766,    -0.3401,     0.0108,
527     0.3336,     0.5916,     0.7587,     0.8218,     0.7815,
528     0.6509,     0.4532,     0.2178,    -0.0240,    -0.2430,
529    -0.4152,    -0.5244,    -0.5630,    -0.5323,    -0.4412,
530    -0.3051,    -0.1436,     0.0225,     0.1730,     0.2911,
531     0.3652,     0.3898,     0.3658,     0.3001,     0.2040,
532     0.0914,    -0.0227,    -0.1249,    -0.2039,    -0.2524,
533    -0.2673,    -0.2494,    -0.2035,    -0.1371,    -0.0597,
534     0.0188,     0.0889,     0.1428,     0.1755,     0.1847,
535     0.1710,     0.1381,     0.0915,     0.0377,    -0.0161,
```

```
536 -0.0637, -0.0999, -0.1213, -0.1267, -0.1166,  
537 -0.0936, -0.0613, -0.0243, 0.0127, 0.0453,  
538 0.0699, 0.0842, 0.0874, 0.0799, 0.0635,  
539 0.0408, 0.0152, -0.0102, -0.0323, -0.0488,  
540 -0.0582, -0.0599, -0.0545, -0.0430, -0.0273,  
541 -0.0096, 0.0078, 0.0229, 0.0341, 0.0403,  
542 0.0413, 0.0372, 0.0291, 0.0181, 0.0059,  
543 -0.0060, -0.0163, -0.0238, -0.0279, -0.0283,  
544 -0.0254, -0.0197, -0.0121, -0.0037, 0.0045,  
545 0.0115,
```

```
546
```

```
547 第0點加速度序列
```

```
548 -0.5000, -0.4341, -0.3201, -0.1748, -0.0186,  
549 0.1276, 0.2460, 0.3239, 0.3555, 0.3416,  
550 0.2885, 0.2067, 0.1082, 0.0058, -0.0890,  
551 -0.1663, -0.2188, -0.2420, -0.2351, -0.2006,  
552 -0.1443, -0.0746, -0.0010, 0.0669, 0.1209,  
553 0.1557, 0.1686, 0.1603, 0.1337, 0.0939,  
554 0.0466, -0.0021, -0.0467, -0.0825, -0.1060,  
555 -0.1153, -0.1104, -0.0926, -0.0649, -0.0315,  
556 0.0031, 0.0346, 0.0593, 0.0748, 0.0799,  
557 0.0751, 0.0619, 0.0425, 0.0198, -0.0033,  
558 -0.0242, -0.0407, -0.0512, -0.0548, -0.0517,  
559 -0.0426, -0.0291, -0.0131, 0.0032, 0.0178,  
560 0.0290, 0.0359, 0.0379, 0.0352, 0.0286,  
561 0.0192, 0.0083, -0.0027, -0.0125, -0.0200,  
562 -0.0247, -0.0260, -0.0242, -0.0196, -0.0130,  
563 -0.0054, 0.0023, 0.0091, 0.0142, 0.0172,  
564 0.0179, 0.0164, 0.0132, 0.0086, 0.0034,  
565 -0.0018, -0.0064, -0.0098, -0.0118, -0.0123,  
566 -0.0113, -0.0090, -0.0058, -0.0022, 0.0014,  
567 0.0046, 0.0069, 0.0082, 0.0085, 0.0077,  
568 0.0060,
```

```
569
```

```
570 第1點加速度序列
```

```
571 -1.0000, -0.8582, -0.6278, -0.3437, -0.0432,  
572 0.2381, 0.4697, 0.6288, 0.7022, 0.6872,  
573 0.5914, 0.4318, 0.2324, 0.0203, -0.1773,  
574 -0.3373, -0.4435, -0.4875, -0.4698, -0.3980,  
575 -0.2855, -0.1489, -0.0060, 0.1261, 0.2331,  
576 0.3045, 0.3347, 0.3229, 0.2735, 0.1951,  
577 0.0994, -0.0008, -0.0928, -0.1662, -0.2136,  
578 -0.2316, -0.2205, -0.1843, -0.1293, -0.0637,  
579 0.0040, 0.0659, 0.1152, 0.1471, 0.1592,  
580 0.1514, 0.1263, 0.0879, 0.0421, -0.0052,
```

```
581    -0.0481,  -0.0817,  -0.1028,  -0.1099,  -0.1034,  
582    -0.0851,  -0.0584,  -0.0269,   0.0052,   0.0341,  
583     0.0567,   0.0709,   0.0756,   0.0709,   0.0582,  
584     0.0395,   0.0176,  -0.0047,  -0.0247,  -0.0400,  
585    -0.0494,  -0.0521,  -0.0484,  -0.0393,  -0.0262,  
586    -0.0112,   0.0040,   0.0175,   0.0278,   0.0341,  
587     0.0358,   0.0332,   0.0268,   0.0177,   0.0072,  
588    -0.0033,  -0.0126,  -0.0196,  -0.0237,  -0.0247,  
589    -0.0226,  -0.0181,  -0.0117,  -0.0045,   0.0026,  
590     0.0089,   0.0136,   0.0164,   0.0170,   0.0155,  
591     0.0123,  
592  
593 請按任意鍵繼續 . . .  
594 */  
595
```