**20150616- WingM5\_4\_10variable\_Prescribed\_Harmonic-Result**

Starting matlabpool using the 'local' configuration ... connected to 8 labs.

Best Mean Stall

Generation f-count f(x) f(x) Generations

1 200 10.17 4061 0

2 300 10.17 4003 0

3 400 10.17 3799 1

4 500 10.17 3447 0

5 600 10.17 3019 1

6 700 10.17 2879 2

7 800 10.17 2892 3

8 900 10.17 2544 4

9 1000 10.17 2602 5

10 1100 10.17 2135 6

11 1200 10.17 2030 7

12 1300 10.17 2122 8

13 1400 10.17 1939 9

14 1500 10.17 1827 10

15 1600 10.17 1872 11

16 1700 10.17 1647 0

17 1800 10.17 1422 1

18 1900 10.17 1233 2

19 2000 10.17 1313 3

20 2100 10.17 1578 4

21 2200 10.17 1508 5

22 2300 10.17 1504 6

23 2400 10.17 1084 7

24 2500 10.17 1182 8

25 2600 10.17 992.2 9

26 2700 10.17 977.9 10

27 2800 10.17 825.5 11

28 2900 10.17 837.9 12

29 3000 10.17 822.4 13

30 3100 10.17 919.8 14

31 3200 10.17 899.1 15

32 3300 10.17 867.5 16

33 3400 10.17 956.3 17

34 3500 10.17 814.7 18

35 3600 10.17 842.4 19

36 3700 10.17 765.4 20

37 3800 10.17 772.9 21

38 3900 10.17 596.7 22

39 4000 10.17 624.4 23

40 4100 10.17 530.4 24

41 4200 10.17 475.7 25

42 4300 10.17 420.8 26

43 4400 10.17 404.2 27

44 4500 10.17 315.7 28

45 4600 10.17 265.7 29

46 4700 10.17 219.4 30

47 4800 10.17 147 31

48 4900 10.17 139.2 32

49 5000 10.17 104.1 33

50 5100 10.17 38.56 34

Optimization terminated: maximum number of generations exceeded.

Switching to the hybrid optimization algorithm (FMINSEARCH).

Iteration Func-count min f(x) Procedure

0 1 10.1727

1 7 10.1727 initial simplex

2 9 10.1727 contract outside

3 11 10.1727 contract inside

4 12 10.1727 reflect

5 14 10.1727 contract inside

6 16 10.1727 contract outside

7 18 10.1727 contract inside

8 20 10.1727 contract inside

9 22 10.1727 contract inside

10 24 10.1727 contract inside

11 26 10.1727 contract inside

12 28 10.1727 contract inside

13 30 10.1727 contract inside

14 32 10.1727 contract inside

15 33 10.1727 reflect

16 35 10.1727 contract inside

17 37 10.1727 contract inside

18 39 10.1727 contract inside

19 41 10.1727 contract inside

20 43 10.1727 contract inside

21 45 10.1727 contract inside

22 47 10.1727 contract inside

23 49 10.1727 contract inside

24 51 10.1727 contract inside

25 52 10.1727 reflect

26 54 10.1727 contract inside

27 56 10.1727 contract inside

28 58 10.1727 contract inside

29 59 10.1727 reflect

30 61 10.1727 contract outside

31 63 10.1727 contract inside

32 65 10.1727 contract inside

33 67 10.1727 contract inside

34 69 10.1727 contract inside

35 77 10.0802 shrink

36 79 10.0802 contract inside

37 81 10.0802 contract inside

38 82 10.0802 reflect

39 90 10.0802 shrink

40 91 10.0802 reflect

41 93 10.0802 contract inside

42 95 10.0802 contract outside

43 97 10.0802 contract inside

44 99 10.0802 contract inside

45 101 10.0623 expand

46 102 10.0623 reflect

47 104 10.0623 contract inside

48 112 10.0591 shrink

49 113 10.0591 reflect

50 114 10.0591 reflect

51 116 10.0533 expand

52 118 10.0415 reflect

53 119 10.0415 reflect

54 121 10.027 expand

55 122 10.027 reflect

56 124 10.027 contract inside

57 126 10.0093 expand

58 128 10.0093 contract inside

59 130 10.0093 contract inside

60 131 10.0093 reflect

61 133 10.0093 contract inside

62 134 10.0093 reflect

63 136 10.0045 reflect

64 138 9.99182 expand

65 139 9.99182 reflect

66 140 9.99182 reflect

67 148 9.99182 shrink

68 150 9.99182 contract outside

69 158 9.99182 shrink

70 159 9.99182 reflect

71 160 9.99182 reflect

72 162 9.98393 expand

73 163 9.98393 reflect

74 164 9.98393 reflect

75 165 9.98393 reflect

76 167 9.98084 expand

77 169 9.97452 expand

78 170 9.97452 reflect

79 171 9.97452 reflect

80 173 9.9665 expand

81 174 9.9665 reflect

82 176 9.9665 contract inside

83 177 9.9665 reflect

84 178 9.9665 reflect

85 180 9.95977 expand

86 182 9.95977 contract inside

87 184 9.95977 contract inside

88 186 9.95977 contract inside

89 187 9.95977 reflect

90 188 9.95977 reflect

91 190 9.95242 expand

92 191 9.95242 reflect

93 192 9.95242 reflect

94 194 9.94939 expand

95 196 9.94094 expand

96 198 9.92873 expand

97 206 9.92873 shrink

98 207 9.92873 reflect

99 208 9.92873 reflect

100 209 9.92873 reflect

101 211 9.92873 contract inside

102 213 9.92439 expand

103 215 9.92411 reflect

104 217 9.92051 reflect

105 219 9.91844 reflect

106 221 9.91069 expand

107 222 9.91069 reflect

108 223 9.91069 reflect

109 225 9.91069 contract inside

110 227 9.91069 contract inside

111 228 9.91069 reflect

112 230 9.91069 contract inside

113 231 9.91069 reflect

114 232 9.91069 reflect

115 233 9.91069 reflect

116 235 9.90307 expand

117 237 9.90307 contract inside

118 238 9.90307 reflect

119 239 9.90307 reflect

120 240 9.90307 reflect

121 242 9.89461 expand

122 243 9.89461 reflect

123 244 9.89461 reflect

124 246 9.89235 expand

125 248 9.87739 expand

126 250 9.87739 contract inside

127 251 9.87739 reflect

128 252 9.87739 reflect

129 260 9.87739 shrink

130 261 9.87739 reflect

131 262 9.87739 reflect

132 263 9.87739 reflect

133 264 9.87739 reflect

134 265 9.87739 reflect

135 267 9.87434 reflect

136 269 9.87427 reflect

137 271 9.86341 expand

138 272 9.86341 reflect

139 273 9.86341 reflect

140 281 9.86341 shrink

141 283 9.86176 reflect

142 285 9.861 reflect

143 287 9.861 contract inside

144 295 9.861 shrink

145 296 9.861 reflect

146 304 9.861 shrink

147 305 9.861 reflect

148 306 9.861 reflect

149 307 9.861 reflect

150 309 9.85965 expand

151 311 9.85965 contract inside

152 312 9.85965 reflect

153 314 9.85819 expand

154 315 9.85819 reflect

155 316 9.85819 reflect

156 318 9.85541 expand

157 319 9.85541 reflect

158 320 9.85541 reflect

159 322 9.85541 contract inside

160 323 9.85541 reflect

161 325 9.85273 expand

162 327 9.85273 contract inside

163 328 9.85273 reflect

164 330 9.85273 contract inside

165 331 9.85273 reflect

166 333 9.8502 expand

167 335 9.8502 contract inside

168 336 9.8502 reflect

169 338 9.84752 expand

170 339 9.84752 reflect

171 341 9.84752 contract inside

172 343 9.84291 expand

173 344 9.84291 reflect

174 346 9.83729 expand

175 347 9.83729 reflect

176 348 9.83729 reflect

177 350 9.83266 reflect

178 351 9.83266 reflect

179 353 9.83266 contract inside

180 355 9.83076 reflect

181 357 9.83038 reflect

182 359 9.82526 expand

183 361 9.82526 contract inside

184 362 9.82526 reflect

185 364 9.82054 expand

186 365 9.82054 reflect

187 367 9.81629 expand

188 375 9.81629 shrink

189 376 9.81629 reflect

190 384 9.81629 shrink

191 385 9.81629 reflect

192 387 9.81603 reflect

193 389 9.81587 reflect

194 397 9.81587 shrink

195 399 9.81511 expand

196 407 9.81511 shrink

197 408 9.81511 reflect

198 410 9.81466 expand

199 411 9.81466 reflect

200 412 9.81466 reflect

201 414 9.81415 expand

202 415 9.81415 reflect

203 417 9.81387 reflect

204 419 9.81384 reflect

205 421 9.81278 expand

206 429 9.81278 shrink

207 430 9.81278 reflect

208 432 9.81227 expand

209 433 9.81227 reflect

210 435 9.81227 contract inside

211 437 9.81227 contract inside

212 439 9.81227 contract inside

213 440 9.81227 reflect

214 442 9.81227 contract inside

215 444 9.81227 contract inside

216 446 9.81227 contract inside

217 447 9.81227 reflect

218 449 9.81195 expand

219 450 9.81195 reflect

220 452 9.81149 expand

221 453 9.81149 reflect

222 455 9.8111 expand

223 456 9.8111 reflect

224 458 9.81038 expand

225 459 9.81038 reflect

226 467 9.81038 shrink

227 469 9.81038 contract outside

228 470 9.81038 reflect

229 472 9.81038 contract inside

230 474 9.81038 contract inside

231 476 9.81038 contract inside

232 477 9.81038 reflect

233 478 9.81038 reflect

234 480 9.81024 expand

235 482 9.81008 expand

236 484 9.80992 expand

237 485 9.80992 reflect

238 486 9.80992 reflect

239 488 9.80992 contract inside

240 489 9.80992 reflect

241 491 9.80982 expand

242 492 9.80982 reflect

243 493 9.80982 reflect

244 495 9.80959 expand

245 497 9.80959 contract inside

246 499 9.80959 contract inside

247 500 9.80959 reflect

248 502 9.80959 contract inside

249 504 9.80959 contract outside

250 506 9.80959 contract inside

251 508 9.80959 contract inside

252 509 9.80959 reflect

253 517 9.80959 shrink

254 519 9.80959 contract outside

255 521 9.80959 contract inside

256 523 9.80959 contract inside

257 525 9.80959 contract inside

258 527 9.80959 contract inside

259 535 9.80959 shrink

260 536 9.80959 reflect

261 537 9.80959 reflect

262 538 9.80959 reflect

263 539 9.80959 reflect

264 540 9.80959 reflect

265 542 9.80957 expand

266 543 9.80957 reflect

267 545 9.80957 contract inside

268 547 9.80954 expand

269 548 9.80954 reflect

270 550 9.8095 expand

271 551 9.8095 reflect

272 553 9.80944 expand

273 554 9.80944 reflect

274 556 9.80937 expand

275 557 9.80937 reflect

276 565 9.80937 shrink

277 566 9.80937 reflect

278 568 9.80931 expand

279 569 9.80931 reflect

280 571 9.8093 reflect

281 573 9.80925 expand

282 575 9.80917 expand

283 576 9.80917 reflect

284 578 9.80915 reflect

285 580 9.80905 expand

286 581 9.80905 reflect

287 583 9.80905 contract inside

288 585 9.80905 contract inside

289 586 9.80905 reflect

290 588 9.80897 expand

291 590 9.80886 expand

292 591 9.80886 reflect

293 599 9.80886 shrink

294 601 9.80886 contract inside

295 603 9.80879 expand

296 604 9.80879 reflect

297 606 9.80872 expand

298 607 9.80872 reflect

299 609 9.8086 expand

300 610 9.8086 reflect

301 611 9.8086 reflect

302 613 9.80855 expand

303 615 9.80847 expand

304 617 9.80847 contract inside

305 618 9.80847 reflect

306 619 9.80847 reflect

307 620 9.80847 reflect

308 622 9.80847 contract inside

309 624 9.80847 contract inside

310 626 9.80845 reflect

311 628 9.80845 contract inside

312 630 9.80845 contract outside

313 631 9.80845 reflect

314 632 9.80845 reflect

315 634 9.80842 expand

316 635 9.80842 reflect

317 637 9.80841 reflect

318 638 9.80841 reflect

319 646 9.80841 shrink

320 647 9.80841 reflect

321 648 9.80841 reflect

322 649 9.80841 reflect

323 650 9.80841 reflect

324 651 9.80841 reflect

325 652 9.80841 reflect

326 654 9.80841 contract inside

327 655 9.80841 reflect

328 657 9.80841 contract inside

329 659 9.80841 contract inside

330 660 9.80841 reflect

331 662 9.8084 reflect

332 664 9.80838 expand

333 666 9.80838 contract inside

334 667 9.80838 reflect

335 668 9.80838 reflect

336 670 9.80838 contract inside

337 671 9.80838 reflect

338 673 9.80835 expand

339 675 9.80835 contract inside

340 676 9.80835 reflect

341 677 9.80835 reflect

342 685 9.80835 shrink

343 686 9.80835 reflect

344 688 9.80833 expand

345 689 9.80833 reflect

346 691 9.80831 expand

347 693 9.80831 contract inside

348 694 9.80831 reflect

349 695 9.80831 reflect

350 697 9.80828 expand

351 698 9.80828 reflect

352 699 9.80828 reflect

353 701 9.80827 reflect

354 703 9.80822 expand

355 705 9.80822 contract inside

356 706 9.80822 reflect

357 707 9.80822 reflect

358 715 9.80822 shrink

359 717 9.80822 contract outside

360 719 9.80822 contract inside

361 720 9.80822 reflect

362 728 9.80822 shrink

363 729 9.80822 reflect

364 730 9.80822 reflect

365 731 9.80822 reflect

366 733 9.80822 reflect

367 735 9.80821 expand

368 736 9.80821 reflect

369 738 9.80821 contract inside

370 739 9.80821 reflect

371 741 9.80821 contract inside

372 743 9.80821 reflect

373 745 9.80819 expand

374 747 9.80819 contract inside

375 748 9.80819 reflect

376 749 9.80819 reflect

377 751 9.80818 expand

378 752 9.80818 reflect

379 754 9.80816 expand

380 755 9.80816 reflect

381 756 9.80816 reflect

382 758 9.80816 contract inside

383 760 9.80816 contract inside

384 762 9.80814 expand

385 763 9.80814 reflect

386 765 9.80811 expand

387 766 9.80811 reflect

388 767 9.80811 reflect

389 769 9.80807 expand

390 771 9.80807 contract inside

391 772 9.80807 reflect

392 774 9.80807 contract inside

393 776 9.80804 expand

394 777 9.80804 reflect

395 778 9.80804 reflect

396 780 9.80802 reflect

397 782 9.80794 expand

398 790 9.80794 shrink

399 791 9.80794 reflect

400 792 9.80794 reflect

401 793 9.80794 reflect

402 801 9.80794 shrink

403 803 9.80794 contract inside

404 811 9.80794 shrink

405 813 9.80794 contract outside

406 814 9.80794 reflect

407 816 9.80793 expand

408 817 9.80793 reflect

409 818 9.80793 reflect

410 820 9.80792 expand

411 828 9.80792 shrink

412 836 9.80792 shrink

413 838 9.80792 contract inside

414 840 9.80792 reflect

415 842 9.80791 expand

416 843 9.80791 reflect

417 845 9.80791 expand

418 847 9.80791 contract inside

419 848 9.80791 reflect

420 850 9.80791 contract inside

421 858 9.80791 shrink

422 859 9.80791 reflect

423 860 9.80791 reflect

424 861 9.80791 reflect

425 863 9.80791 contract inside

426 864 9.80791 reflect

427 865 9.80791 reflect

428 866 9.80791 reflect

429 868 9.8079 expand

430 870 9.8079 contract inside

431 871 9.8079 reflect

432 872 9.8079 reflect

433 874 9.8079 expand

434 876 9.8079 contract inside

435 878 9.8079 contract inside

436 886 9.8079 shrink

437 888 9.8079 contract inside

438 890 9.8079 contract inside

439 891 9.8079 reflect

440 892 9.8079 reflect

441 894 9.8079 expand

442 895 9.8079 reflect

443 897 9.8079 expand

444 899 9.8079 contract inside

445 900 9.8079 reflect

446 901 9.8079 reflect

447 909 9.8079 shrink

448 910 9.8079 reflect

449 912 9.8079 contract inside

450 914 9.8079 contract inside

451 915 9.8079 reflect

452 917 9.8079 reflect

453 925 9.8079 shrink

454 926 9.8079 reflect

455 928 9.8079 expand

456 929 9.8079 reflect

457 931 9.8079 contract inside

458 932 9.8079 reflect

459 934 9.8079 expand

460 935 9.8079 reflect

461 937 9.80789 expand

462 938 9.80789 reflect

463 939 9.80789 reflect

464 941 9.80789 expand

465 942 9.80789 reflect

466 944 9.80789 expand

467 945 9.80789 reflect

468 947 9.80789 expand

469 948 9.80789 reflect

470 950 9.80789 contract inside

471 952 9.80789 expand

472 953 9.80789 reflect

473 955 9.80788 expand

474 956 9.80788 reflect

475 958 9.80788 reflect

476 960 9.80788 expand

477 961 9.80788 reflect

478 963 9.80788 contract inside

479 965 9.80787 expand

480 966 9.80787 reflect

481 974 9.80787 shrink

482 975 9.80787 reflect

483 977 9.80787 expand

484 985 9.80787 shrink

485 987 9.80787 contract inside

486 989 9.80787 contract inside

487 997 9.80787 shrink

488 999 9.80787 contract inside

489 1001 9.80787 contract inside

490 1002 9.80787 reflect

491 1004 9.80787 contract inside

492 1005 9.80787 reflect

493 1007 9.80787 expand

494 1008 9.80787 reflect

495 1010 9.80787 expand

496 1012 9.80787 contract inside

497 1013 9.80787 reflect

498 1014 9.80787 reflect

499 1016 9.80786 expand

500 1017 9.80786 reflect

501 1019 9.80786 expand

502 1020 9.80786 reflect

503 1022 9.80786 expand

504 1024 9.80786 contract inside

505 1025 9.80786 reflect

506 1027 9.80786 reflect

507 1029 9.80786 expand

508 1030 9.80786 reflect

509 1032 9.80785 expand

510 1033 9.80785 reflect

511 1034 9.80785 reflect

512 1036 9.80785 contract inside

513 1038 9.80785 contract inside

514 1040 9.80785 expand

515 1041 9.80785 reflect

516 1043 9.80784 expand

517 1044 9.80784 reflect

518 1045 9.80784 reflect

519 1047 9.80784 expand

520 1048 9.80784 reflect

521 1050 9.80783 expand

522 1052 9.80783 contract inside

523 1053 9.80783 reflect

524 1054 9.80783 reflect

525 1056 9.80781 expand

526 1058 9.80781 contract inside

527 1059 9.80781 reflect

528 1060 9.80781 reflect

529 1062 9.8078 expand

530 1063 9.8078 reflect

531 1065 9.8078 contract inside

532 1067 9.8078 contract inside

533 1068 9.8078 reflect

534 1076 9.8078 shrink

535 1078 9.8078 reflect

536 1080 9.8078 contract inside

537 1082 9.80779 expand

538 1090 9.80779 shrink

539 1091 9.80779 reflect

540 1093 9.80778 expand

541 1095 9.80778 contract inside

542 1096 9.80778 reflect

543 1097 9.80778 reflect

544 1099 9.80777 expand

545 1100 9.80777 reflect

546 1108 9.80777 shrink

547 1109 9.80777 reflect

548 1111 9.80777 expand

549 1113 9.80777 contract inside

550 1114 9.80777 reflect

551 1115 9.80777 reflect

552 1117 9.80776 expand

553 1119 9.80776 contract inside

554 1121 9.80776 contract inside

555 1122 9.80776 reflect

556 1123 9.80776 reflect

557 1125 9.80776 expand

558 1133 9.80776 shrink

559 1134 9.80776 reflect

560 1135 9.80776 reflect

561 1136 9.80776 reflect

562 1138 9.80776 contract inside

563 1140 9.80776 reflect

564 1142 9.80775 expand

565 1143 9.80775 reflect

566 1144 9.80775 reflect

567 1146 9.80775 expand

568 1147 9.80775 reflect

569 1148 9.80775 reflect

570 1150 9.80774 expand

571 1152 9.80774 contract inside

572 1153 9.80774 reflect

573 1155 9.80774 contract inside

574 1156 9.80774 reflect

575 1158 9.80774 reflect

576 1160 9.80773 expand

577 1168 9.80773 shrink

578 1169 9.80773 reflect

579 1170 9.80773 reflect

580 1171 9.80773 reflect

581 1173 9.80773 contract inside

582 1174 9.80773 reflect

583 1175 9.80773 reflect

584 1177 9.80773 contract inside

585 1179 9.80772 expand

586 1180 9.80772 reflect

587 1182 9.80771 expand

588 1184 9.80771 contract inside

589 1186 9.80771 contract inside

590 1188 9.80771 contract inside

591 1189 9.80771 reflect

592 1190 9.80771 reflect

593 1192 9.80771 expand

594 1194 9.80771 contract inside

595 1196 9.80771 contract inside

596 1197 9.80771 reflect

597 1198 9.80771 reflect

598 1200 9.8077 expand

599 1201 9.8077 reflect

600 1203 9.80769 expand

601 1204 9.80769 reflect

602 1206 9.80767 expand

603 1208 9.80767 contract inside

604 1209 9.80767 reflect

605 1211 9.80767 contract inside

606 1213 9.80766 expand

607 1214 9.80766 reflect

608 1216 9.80766 contract inside

609 1218 9.80764 expand

610 1219 9.80764 reflect

611 1221 9.80761 expand

612 1223 9.80761 contract inside

613 1224 9.80761 reflect

614 1225 9.80761 reflect

615 1227 9.80761 contract inside

616 1229 9.80757 expand

617 1230 9.80757 reflect

618 1232 9.80753 expand

619 1233 9.80753 reflect

620 1235 9.80748 expand

621 1236 9.80748 reflect

622 1238 9.80738 expand

623 1239 9.80738 reflect

624 1241 9.80738 contract inside

625 1242 9.80738 reflect

626 1244 9.80738 contract inside

627 1246 9.80738 contract inside

628 1248 9.80738 contract inside

629 1249 9.80738 reflect

630 1251 9.80738 contract inside

631 1253 9.80735 reflect

632 1255 9.80726 expand

633 1256 9.80726 reflect

634 1258 9.80726 contract inside

635 1259 9.80726 reflect

636 1261 9.80726 reflect

637 1263 9.80726 contract inside

638 1265 9.80726 contract inside

639 1267 9.80717 expand

640 1268 9.80717 reflect

641 1270 9.80705 expand

642 1272 9.80705 contract inside

643 1273 9.80705 reflect

644 1274 9.80705 reflect

645 1276 9.80705 contract inside

646 1278 9.80703 reflect

647 1280 9.80692 expand

648 1282 9.80692 contract inside

649 1290 9.80692 shrink

650 1291 9.80692 reflect

651 1293 9.80692 contract inside

652 1295 9.80692 contract inside

653 1296 9.80692 reflect

654 1298 9.80692 contract inside

655 1300 9.80687 expand

656 1301 9.80687 reflect

657 1303 9.80687 contract inside

658 1305 9.80679 expand

659 1306 9.80679 reflect

660 1307 9.80679 reflect

661 1309 9.8067 expand

662 1310 9.8067 reflect

663 1312 9.8066 expand

664 1313 9.8066 reflect

665 1315 9.80658 reflect

666 1323 9.80658 shrink

667 1324 9.80658 reflect

668 1326 9.80646 expand

669 1327 9.80646 reflect

670 1329 9.80646 contract inside

671 1331 9.80646 contract inside

672 1332 9.80646 reflect

673 1334 9.80646 contract inside

674 1335 9.80646 reflect

675 1337 9.80646 contract inside

676 1339 9.80635 expand

677 1340 9.80635 reflect

678 1342 9.80633 reflect

679 1344 9.80624 expand

680 1345 9.80624 reflect

681 1347 9.80608 expand

682 1349 9.80608 contract inside

683 1350 9.80608 reflect

684 1351 9.80608 reflect

685 1353 9.8059 expand

686 1354 9.8059 reflect

687 1356 9.8059 contract inside

688 1358 9.80572 expand

689 1359 9.80572 reflect

690 1361 9.80545 expand

691 1362 9.80545 reflect

692 1364 9.80504 expand

693 1365 9.80504 reflect

694 1373 9.80504 shrink

695 1374 9.80504 reflect

696 1376 9.80503 reflect

697 1378 9.80495 reflect

698 1380 9.80461 expand

699 1381 9.80461 reflect

700 1383 9.8043 expand

701 1384 9.8043 reflect

702 1385 9.8043 reflect

703 1387 9.80412 reflect

704 1389 9.80347 expand

705 1390 9.80347 reflect

706 1391 9.80347 reflect

707 1393 9.80341 reflect

708 1401 9.80341 shrink

709 1403 9.80308 expand

710 1405 9.80308 contract inside

711 1406 9.80308 reflect

712 1408 9.80282 expand

713 1409 9.80282 reflect

714 1411 9.80251 expand

715 1412 9.80251 reflect

716 1414 9.80233 reflect

717 1422 9.80233 shrink

718 1423 9.80233 reflect

719 1425 9.80233 contract inside

720 1426 9.80233 reflect

721 1428 9.80233 contract inside

722 1429 9.80233 reflect

723 1431 9.80233 contract inside

724 1433 9.80229 reflect

725 1435 9.80221 reflect

726 1437 9.80221 contract outside

727 1439 9.80218 reflect

728 1447 9.80218 shrink

729 1448 9.80218 reflect

730 1449 9.80218 reflect

731 1451 9.80218 contract inside

732 1453 9.80218 contract inside

733 1455 9.80218 contract inside

734 1457 9.80218 reflect

735 1465 9.80218 shrink

736 1466 9.80218 reflect

737 1467 9.80218 reflect

738 1468 9.80218 reflect

739 1476 9.80218 shrink

740 1484 9.80218 shrink

741 1492 9.80218 shrink

742 1493 9.80218 reflect

743 1494 9.80218 reflect

744 1496 9.80218 contract inside

745 1498 9.80218 reflect

746 1499 9.80218 reflect

747 1501 9.80218 contract inside

748 1503 9.80218 contract inside

749 1505 9.80218 contract inside

750 1507 9.80218 reflect

751 1509 9.80218 contract inside

752 1511 9.80218 contract inside

753 1519 9.80218 shrink

754 1520 9.80218 reflect

755 1522 9.80218 reflect

756 1524 9.80218 contract inside

757 1526 9.80218 contract inside

758 1528 9.80218 contract inside

759 1530 9.80218 contract inside

760 1531 9.80218 reflect

761 1539 9.80218 shrink

762 1540 9.80218 reflect

763 1542 9.80218 contract inside

764 1544 9.80218 contract outside

765 1546 9.80218 contract inside

766 1547 9.80218 reflect

767 1549 9.80218 contract inside

768 1551 9.80218 contract outside

769 1553 9.80218 contract inside

770 1555 9.80218 contract inside

771 1557 9.80218 reflect

772 1559 9.80218 contract inside

773 1561 9.80218 contract inside

774 1563 9.80218 contract inside

775 1565 9.80218 contract inside

776 1567 9.80218 contract inside

777 1569 9.80218 contract inside

778 1570 9.80218 reflect

779 1578 9.80218 shrink

780 1580 9.80218 contract outside

781 1588 9.80218 shrink

782 1589 9.80218 reflect

783 1591 9.80218 contract inside

784 1593 9.80218 contract inside

785 1595 9.80218 reflect

786 1596 9.80218 reflect

787 1598 9.80218 contract inside

788 1600 9.80218 contract inside

789 1602 9.80218 contract inside

790 1610 9.80218 shrink

791 1618 9.80218 shrink

792 1620 9.80218 contract inside

793 1622 9.80218 contract inside

794 1630 9.80218 shrink

795 1632 9.80218 contract inside

796 1633 9.80218 reflect

797 1635 9.80218 contract inside

798 1636 9.80218 reflect

799 1638 9.80218 contract inside

800 1639 9.80218 reflect

801 1641 9.80218 contract inside

802 1643 9.80218 contract inside

803 1645 9.80218 reflect

804 1647 9.80218 contract inside

805 1649 9.80218 contract inside

806 1651 9.80218 contract inside

807 1652 9.80218 reflect

808 1654 9.80218 contract inside

809 1656 9.80218 reflect

810 1664 9.80218 shrink

811 1665 9.80218 reflect

812 1666 9.80218 reflect

813 1667 9.80218 reflect

814 1669 9.80218 reflect

815 1671 9.80218 reflect

816 1673 9.80218 contract inside

817 1675 9.80218 reflect

818 1677 9.80218 contract inside

819 1679 9.80218 contract inside

820 1681 9.80218 contract inside

821 1683 9.80218 contract inside

822 1691 9.80218 shrink

823 1693 9.80218 contract inside

824 1695 9.80218 contract inside

825 1697 9.80218 reflect

826 1699 9.80218 contract inside

827 1707 9.80218 shrink

828 1708 9.80218 reflect

829 1709 9.80218 reflect

830 1710 9.80218 reflect

831 1712 9.80218 reflect

832 1714 9.80218 contract inside

833 1716 9.80218 contract inside

834 1717 9.80218 reflect

835 1719 9.80218 reflect

836 1720 9.80218 reflect

837 1722 9.80218 contract inside

838 1724 9.80218 contract inside

839 1726 9.80218 contract inside

840 1728 9.80218 contract inside

841 1730 9.80218 contract inside

842 1732 9.80218 contract inside

843 1733 9.80218 reflect

844 1734 9.80218 reflect

845 1735 9.80218 reflect

846 1736 9.80218 reflect

847 1737 9.80218 reflect

848 1739 9.80218 expand

849 1747 9.80218 shrink

850 1748 9.80218 reflect

851 1749 9.80218 reflect

852 1751 9.80218 contract inside

853 1759 9.80218 shrink

854 1761 9.80218 contract outside

855 1763 9.80218 contract inside

856 1771 9.80218 shrink

857 1772 9.80218 reflect

858 1774 9.80218 reflect

859 1782 9.80218 shrink

860 1783 9.80218 reflect

861 1784 9.80218 reflect

862 1786 9.80218 expand

863 1787 9.80218 reflect

864 1788 9.80218 reflect

865 1790 9.80218 reflect

866 1792 9.80218 expand

867 1793 9.80218 reflect

868 1795 9.80218 contract inside

869 1797 9.80218 expand

870 1805 9.80218 shrink

871 1807 9.80218 contract outside

872 1809 9.80218 contract inside

873 1810 9.80218 reflect

874 1818 9.80218 shrink

875 1819 9.80218 reflect

876 1820 9.80218 reflect

877 1821 9.80218 reflect

878 1822 9.80218 reflect

879 1824 9.80218 contract inside

880 1825 9.80218 reflect

881 1826 9.80218 reflect

882 1828 9.80218 reflect

883 1830 9.80218 expand

884 1832 9.80218 contract inside

885 1834 9.80218 contract inside

886 1835 9.80218 reflect

887 1837 9.80218 contract inside

888 1838 9.80218 reflect

889 1839 9.80218 reflect

890 1841 9.80218 contract inside

891 1843 9.80218 contract inside

892 1845 9.80218 contract inside

893 1846 9.80218 reflect

894 1848 9.80218 contract inside

895 1850 9.80218 expand

896 1851 9.80218 reflect

897 1853 9.80218 expand

898 1855 9.80218 contract inside

899 1856 9.80218 reflect

900 1858 9.80218 contract inside

901 1859 9.80218 reflect

902 1861 9.80218 expand

903 1862 9.80218 reflect

904 1863 9.80218 reflect

905 1865 9.80218 expand

906 1867 9.80218 contract inside

907 1868 9.80218 reflect

908 1876 9.80218 shrink

909 1877 9.80218 reflect

910 1878 9.80218 reflect

911 1879 9.80218 reflect

912 1881 9.80218 contract outside

913 1882 9.80218 reflect

914 1884 9.80218 contract inside

915 1892 9.80218 shrink

916 1893 9.80218 reflect

917 1894 9.80218 reflect

918 1895 9.80218 reflect

919 1896 9.80218 reflect

920 1904 9.80218 shrink

921 1906 9.80218 contract outside

Optimization terminated:

the current x satisfies the termination criteria using OPTIONS.TolX of 1.000000e-015

and F(X) satisfies the convergence criteria using OPTIONS.TolFun of 1.000000e-015

FMINSEARCH terminated.

**x =[210.1233,0.7521,3.0971,1.1309,0.4864,0.0067];**

**fval =9.8022;**

exitflag =0;

output =

problemtype: 'unconstrained'

rngstate: [1x1 struct]

generations: 50

funccount: 7006

message: [1x274 char]

population,scores,

Sending a stop signal to all the labs ... stopped.

Caculation finished and the elapsedTime= 39.8817hours

**P\_asterisk =9.8024;**

**L =1.0004; delta =4.2835e-004; penaltyfun1 =0.8567;**

penaltyfun2 =0;

AR =3.7643; Re =113.6024; penaltyfun5 =0;

obj\_function =10.6591;