*** SCALCG *** February 14, 2006

1 SCALCG Algorithm: Extended Freudenstein & Roth Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	9	6	20	9	4	.2449212683962E+05	.4390708653214E-06
2000	9	6	20	9	8	.4898425368469E+05	.3134773180516E-04
3000	10	7	22	10	13	.7347638051889E+05	.4303291974835E-06
4000	9	6	21	10	5	.9796850735849E+05	.1005183713461E-05
5000	10	7	25	10	8	.1224606341981E+06	.3235531299045E-04
6000	11	7	32	12	11	.4098253325879E-06	.3315882544639E-07
7000	11	7	32	12	12	.2493455466035E-06	.3686098583044E-07
8000	14	11	37	14	16	.1220704169334E-11	.0000000000000E+00
9000	11	7	32	12	16	.4924254959150E-06	.4398352205605E-07
10000	11	8	34	11	18	.3735977536272E-04	.1632513745302E-05
TOTAL	105	72	275	109	1.11(seconds)	proc= 68.57%	

2 SCALCG Algorithm: Extended Trigonometric Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	21	15	45	18	6	.5264047848327E-11	.5619483319792E-07
2000	28	19	52	18	12	.1244849505980E-10	.4941436163113E-05
3000	30	20	59	22	22	.6870613150299E-11	.1743002790357E-05
4000	26	20	51	19	25	.2485489169995E-10	.3153082027600E-05
5000	32	18	58	20	36	.1228074831292E-10	.1430157394306E-05
6000	33	23	60	21	44	.9394580720731E-11	.1739312970660E-05
7000	34	22	59	19	51	.1843991120693E-10	.2578811646600E-05
8000	53	30	85	25	87	.3764100630396E-08	.4072599348279E-05
9000	54	29	82	21	96	.5382878969331E-08	.8520915292885E-05
10000	56	26	86	22	110	.6416273300480E-08	.9538842268372E-05
TOTAL	367	222	637	205	4.89(seconds)	proc= 60.49%	

3 SCALCG Algorithm: Extended Rosenbrock Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	27	24	55	20	4	.2671474726769E-10	.6737421699350E-09
2000	24	20	55	20	9	.8327185042997E-08	.1117798044932E-04
3000	26	20	59	19	14	.1422614843723E-04	.1902633763702E-04
4000	25	18	61	23	19	.2852018147718E-07	.3984860017112E-05
5000	30	25	66	23	25	.1843916991842E-07	.1156669450005E-05
6000	27	24	61	21	29	.1300404150176E-07	.6028662258883E-05
7000	27	22	60	22	32	.1584722417861E-06	.5636806266249E-05
8000	24	18	53	20	33	.1742684939716E-07	.2310414806382E-05
9000	26	21	54	18	38	.8864858017513E-10	.3006454067070E-05
10000	27	23	62	23	47	.9439731159879E-08	.1074695159585E-05
TOTAL	263	215	586	209	2.50(seconds)	proc= 81.75%	

4 SCALCG Algorithm: Extended White & Holst Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	25	21	52	19	4	.3824603210331E-08	.5899873288629E-06
2000	26	19	56	22	9	.2559550545892E-09	.1665747363246E-05
3000	26	19	54	22	13	.4889194710963E-12	.1962549188722E-09
4000	24	20	48	19	15	.7112807713237E-11	.1661070483754E-07
5000	26	20	55	20	21	.1850844683507E-10	.9216328578501E-08
6000	24	20	51	20	23	.8672381568588E-08	.1862758064384E-05
7000	24	20	48	18	27	.1046329179389E-06	.1353102569954E-04
8000	24	20	51	20	31	.9074123955400E-08	.1754143085060E-05
9000	26	19	59	22	41	.2226097865839E-10	.3162947534295E-07
10000	25	22	52	21	40	.2420031509748E-09	.9395406528574E-07
TOTAL	250	200	526	203	2.24(seconds)	proc= 80.00%	

5 SCALCG Algorithm: Extended Beale Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	10	9	21	9	1	.2102922641955E-09	.4628585197162E-06
2000	10	9	21	9	2	.7973458979765E-09	.1111153475833E-05
3000	10	9	21	9	2	.1222372186655E-08	.1377702755819E-05
4000	10	9	21	9	4	.1504983512821E-08	.1481231969026E-05
5000	10	9	21	9	4	.1704317960674E-08	.1517767269175E-05
6000	10	9	21	9	6	.1854295224654E-08	.1524658990225E-05
7000	10	9	21	9	6	.1973283046411E-08	.1517699008017E-05
8000	10	9	21	9	7	.2071649649065E-08	.1504138378180E-05
9000	10	9	21	9	8	.2155576176030E-08	.1487529507107E-05
10000	10	9	21	9	9	.2228944639969E-08	.1469695830938E-05
TOTAL	100	90	210	90	.49(seconds)	proc= 90.00%	

6 SCALCG Algorithm: Extended Penalty Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	8	6	29	8	1	.8831940750836E+03	.3221346281021E-05
2000	9	6	32	9	4	.1814063664869E+04	.6216187277490E-05
3000	8	5	32	9	8	.2755973749506E+04	.1656563405210E-07
4000	18	15	43	17	11	.3704070535012E+04	.1040219543295E-05
5000	9	5	35	10	11	.4656333923744E+04	.8267747536952E-07
6000	17	15	46	17	17	.5611676659140E+04	.8590217686573E-07
7000	16	14	45	17	20	.6569428560737E+04	.1036467502220E-05
8000	11	7	38	10	20	.7529139638522E+04	.2280276581192E-05
9000	15	12	46	16	26	.8490489281464E+04	.1488054206982E-05
10000	12	8	41	11	26	.9453238852842E+04	.1152547572977E-05
TOTAL	123	93	387	124	1.44(seconds)	proc= 75.61%	

7 SCALCG Algorithm: Perturbed Quadratic Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	292	129	390	96	21	.1311362645458E-12	.2871763151756E-05
2000	411	180	532	119	55	.2033236417225E-12	.5730290680640E-05
3000	513	226	673	158	106	.8193651526571E-13	.6214940488418E-05
4000	620	274	814	192	171	.1052298087697E-12	.6216960172590E-05
5000	710	302	953	241	251	.2699602526368E-12	.6093378219770E-05
6000	701	316	913	210	287	.2647474133724E-12	.6768157885366E-05
7000	803	352	1053	248	389	.2778167173026E-12	.7025913823389E-05
8000	933	423	1215	280	526	.8493820890095E-13	.3706647016867E-05
9000	1010	461	1294	282	616	.1074287673616E-12	.4624622936644E-05
10000	1096	502	1422	324	749	.1029591660957E-12	.5412649656615E-05
TOTAL	7089	3165	9259	2150	31.71(seconds)	proc= 44.65%	

8 SCALCG Algorithm: Raydan 1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	244	110	319	72	18	.5005000000000E+05	.3264998821848E-05
2000	342	162	460	112	51	.2001000000000E+06	.4125278285682E-05
3000	396	211	542	140	89	.4501500000000E+06	.2213772813113E-05
4000	548	267	763	211	168	.8002000000000E+06	.5189136348312E-05
5000	638	320	872	222	240	.1250250000000E+07	.6916027894992E-05
6000	614	287	860	243	283	.1800300000000E+07	.4076352868305E-05
7000	646	335	892	238	341	.2450350000000E+07	.3087381041120E-05
8000	901	465	1265	346	550	.3200400000000E+07	.5807774698437E-05
9000	967	476	1358	373	668	.4050450000000E+07	.3926528409678E-05
10000	865	446	1208	338	656	.5000500000000E+07	.7120617178689E-05
TOTAL	6161	3079	8539	2295	30.64(seconds)	proc= 49.98%	

9 SCALCG Algorithm: Raydan 2 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	3	2	9	4	1	.1000000006648E+04	.1635080389044E-06
2000	3	2	9	4	1	.2000000013020E+04	.2278967988341E-06
3000	3	2	9	4	1	.3000000019346E+04	.2772841656783E-06
4000	3	2	9	4	1	.4000000025648E+04	.3189150972674E-06
5000	3	2	9	4	2	.5000000031935E+04	.3555884887929E-06
6000	3	2	9	4	2	.6000000038212E+04	.3887515032366E-06
7000	3	2	9	4	3	.7000000044481E+04	.4192396853265E-06
8000	3	2	9	4	3	.8000000050742E+04	.4476034679730E-06
9000	3	2	9	4	4	.9000000057000E+04	.4742638019954E-06
10000	3	2	9	4	3	.1000000006325E+05	.4994219282161E-06
TOTAL	30	20	90	40	.21(seconds)	proc= 66.67%	

10 SCALCG Algorithm: Diagonal 1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	1045	944	26357	922	1066	-.2706832341531E+07	.1716002262416E-05
2000	1462	1325	38374	1293	3112	-.1220840670371E+08	.1488882874024E-05
3000	1537	1380	37649	1322	4531	-.2928916452173E+08	.1859771777918E-05
4000	2001	1828	49862	1781	8118	-.5436698616002E+08	.7177286065828E-05
5000	1990	1755	47073	1728	9464	-.8773370883420E+08	.1925603355242E-05
6000	2001	1817	53496	1766	12867	-.1296143649857E+09	.1160067848014E-03
7000	2001	1811	50796	1774	14422	-.1801922918025E+09	.3923019905955E-03
8000	2001	1780	46568	1723	15180	-.2396222480462E+09	.2786674065467E-03
9000	2001	1807	52946	1770	19231	-.3080381575978E+09	.1985921169689E-02
10000	2001	1783	50720	1741	20355	-.3855580713170E+09	.4271209314273E-02
TOTAL	18040	16230	453841	15820	1083.46(seconds)	proc= 89.97%	

11 SCALCG Algorithm: Diagonal 2 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	168	69	247	74	17	.3127464989767E+02	.1755927194816E-05
2000	222	93	331	99	41	.3699431144643E+02	.2009717962233E-05
3000	309	151	423	110	80	.4056322918910E+02	.1956297424911E-05
4000	338	142	509	159	126	.4319524088976E+02	.1660054638308E-05
5000	372	170	539	154	167	.4529383463239E+02	.1711500745536E-05
6000	416	176	623	199	233	.4704550126796E+02	.1759181631184E-05
7000	481	227	691	200	305	.4855246482173E+02	.1190190253892E-05
8000	459	206	672	203	334	.4987707417534E+02	.1279487971615E-05
9000	478	214	687	197	386	.5106027014826E+02	.2866158946761E-05
10000	525	226	771	235	482	.5213043558513E+02	.1468882378502E-05
TOTAL	3768	1674	5493	1630	21.71(seconds)	proc= 44.43%	

12 SCALCG Algorithm: Diagonal 3 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	771	671	18143	648	1094	-.4957524745606E+06	.1495058416458E-05
2000	1143	995	26646	974	3232	-.1991449986573E+07	.1195626122296E-05
3000	1945	1787	43205	1768	7875	-.4487144190354E+07	.1693544678523E-05
4000	1265	1104	25949	1064	6321	-.7982837036444E+07	.1269351870840E-05
5000	2001	1808	42744	1751	13006	-.1247852913784E+08	.1118005492438E-04
6000	2001	1813	42393	1732	15480	-.1797422076794E+08	.1986931455618E-04
7000	2001	1804	40790	1756	17389	-.2446991207268E+08	.3165657764616E-05
8000	2001	1741	45259	1705	22033	-.3196560313920E+08	.2838060014159E-04
9000	2001	1781	40599	1698	22261	-.4046129402376E+08	.1856340358646E-03
10000	2001	1739	41967	1680	25565	-.4995698476475E+08	.1790199521904E-03
TOTAL	17130	15243	367695	14776	1342.56(seconds)	proc= 88.98%	

13 SCALCG Algorithm: Hager Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	252	232	6880	235	391	-.4474419132154E+05	.2584892135809E-05
2000	330	309	9191	310	1026	-.1471735005125E+06	.1705699726348E-05
3000	305	280	8036	283	1378	-.2925501003138E+06	.2546803189896E-05
4000	784	759	23820	759	5436	-.4746425076978E+06	.1367032950763E-05
5000	1289	1264	40760	1260	11461	-.6896067628040E+06	.1608013382674E-05
6000	970	939	30146	942	10084	-.9347349321991E+06	.2175566766768E-05
7000	741	706	22274	716	8704	-.1207973806382E+07	.1183668144446E-05
8000	884	845	26661	851	11910	-.1507691037216E+07	.1881308920346E-05
9000	1740	1709	55411	1711	28026	-.1832544956898E+07	.1482239990136E-05
10000	683	646	19745	647	11190	-.2181405217178E+07	.1929284660913E-05
TOTAL	7978	7689	242924	7714	896.06(seconds)	proc= 96.38%	

14 SCALCG Algorithm: Generalized Tridiagonal 1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	21	5	47	20	5	.9972103074860E+03	.1513066214796E-05
2000	21	4	49	22	10	.1997210307486E+04	.1442498733257E-05
3000	22	5	56	22	17	.2997210307486E+04	.2315442569488E-05
4000	21	3	59	21	24	.3997210307486E+04	.1733821224276E-05
5000	25	7	212	25	98	.4997210307486E+04	.1633521203981E-05
6000	21	4	51	22	31	.5997210307486E+04	.1113323974313E-05
7000	29	13	280	28	182	.6997210307486E+04	.2182284573390E-05
8000	20	3	48	20	40	.7997210307486E+04	.2058215053057E-05
9000	62	49	1417	61	1185	.8997210307486E+04	.2717561320367E-05
10000	56	42	1170	55	1081	.9997210307486E+04	.1842797458964E-05
TOTAL	298	135	3389	296	26.73(seconds)	proc= 45.30%	

15 SCALCG Algorithm: Extended Tridiagonal 1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	7	5	18	7	1	.8276519923472E-07	.4749937698908E-05
2000	5	3	14	5	2	.6951232088110E-03	.1876981361433E-04
3000	9	6	19	8	4	.3688508397594E-07	.1401609026752E-04
4000	9	7	19	8	5	.1043007021180E-06	.4724016461114E-04
5000	10	8	21	9	7	.3166368527187E-07	.6224564765173E-04
6000	10	8	21	9	8	.3910560744478E-07	.7244183725755E-04
7000	10	8	20	8	9	.4648113431393E-07	.6593051664713E-04
8000	10	8	20	8	11	.5383251141611E-07	.6887543794334E-04
9000	10	8	20	8	12	.6115040554474E-07	.6806973173991E-04
10000	10	8	20	8	13	.6840667966222E-07	.6323530417967E-04
TOTAL	90	69	192	78	.72(seconds)	proc= 76.67%	

16 SCALCG Algorithm: Extended Three Expo Terms Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	7	6	15	6	1	.1279633348329E+04	.1328420882556E-06
2000	7	6	15	6	2	.2559266696659E+04	.9539275064063E-08
3000	7	6	15	6	4	.3838900044988E+04	.1851674071702E-06
4000	7	6	15	6	4	.5118533393317E+04	.1838714544844E-06
5000	7	6	15	6	6	.6398166741647E+04	.6960313510708E-06
6000	7	6	15	6	7	.7677800089976E+04	.1087119154530E-06
7000	7	6	15	6	8	.8957433438305E+04	.8012512517710E-06
8000	7	6	15	6	11	.1023706678663E+05	.6127085538086E-06
9000	7	6	15	6	10	.1151670013496E+05	.1745713333253E-05
10000	7	6	15	6	12	.1279633348329E+05	.1189823952484E-05
TOTAL	70	60	150	60	.65(seconds)	proc= 85.71%	

17 SCALCG Algorithm: Generalized Tridiagonal 2 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	59	31	94	32	12	.9584127765256E+00	.4007911368308E-05
2000	51	26	81	26	22	.9584127765255E+00	.2567895229758E-05
3000	46	19	79	29	32	.9584127765255E+00	.2807104744378E-05
4000	48	23	81	29	43	.1215078813006E+01	.1781824794191E-05
5000	51	20	89	33	59	.2478470208626E+01	.3139246075207E-05
6000	43	21	73	26	58	.1637854424629E+01	.2188721729257E-05
7000	43	23	76	29	70	.1637854424630E+01	.3327735809238E-05
8000	51	23	84	29	90	.2752708757255E+01	.1852580817862E-05
9000	55	32	85	26	101	.2752708757255E+01	.2399485608852E-05
10000	43	22	74	27	98	.1637854424629E+01	.2005115171033E-05
TOTAL	490	240	816	286	5.85(seconds)	proc= 48.98%	

18 SCALCG Algorithm: Diagonal 4 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	3	2	8	3	1	.4645125024689E-07	.8868952683780E-14
2000	3	2	8	3	0	.2113558990606E-06	.8244881659764E-14
3000	3	2	8	3	1	.9699462609233E-06	.3303854665214E-13
4000	3	1	8	3	1	.9664180537099E-03	.8769926420924E-13
5000	3	1	8	3	2	.1577411548205E-02	.9027455438772E-13
6000	3	1	8	3	2	.1505845449509E-03	.5345922851689E-13
7000	3	1	8	3	2	.1647906203720E-01	.2184615541318E-12
8000	3	1	8	3	3	.3217735674587E-01	.4314623801015E-12
9000	4	2	9	3	3	.2180160023478E-02	.4320745157578E-10
10000	3	1	8	3	3	.9257938002963E-01	.9953041634278E-12
TOTAL	31	14	81	30	.18(seconds)	proc= 45.16%	

19 SCALCG Algorithm: Diagonal 5 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	3	2	9	4	1	.6931471805605E+03	.8715767513481E-10
2000	3	2	9	4	2	.1386294361121E+04	.1502774266620E-09
3000	3	2	9	4	4	.2079441541682E+04	.1994240159959E-09
4000	3	2	9	4	4	.2772588722243E+04	.2412406269786E-09
5000	3	2	9	4	5	.3465735902804E+04	.2770879468265E-09
6000	3	2	9	4	7	.4158883083366E+04	.3079235675125E-09
7000	3	2	9	4	7	.4852030263927E+04	.3435485667152E-09
8000	3	2	9	4	9	.5545177444488E+04	.3732591534201E-09
9000	3	2	9	4	9	.6238324625049E+04	.4040999184988E-09
10000	3	2	9	4	11	.6931471805610E+04	.4277548367598E-09
TOTAL	30	20	90	40	.59(seconds)	proc= 66.67%	

20 SCALCG Algorithm: Extended Himmelblau Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	6	4	15	7	0	.2789264791299E-09	.1502904592152E-07
2000	6	4	15	7	1	.6461607190192E-09	.1911338576430E-07
3000	6	4	15	7	3	.1032043090861E-08	.2211187411794E-07
4000	6	4	15	7	2	.1427588297377E-08	.2459401340145E-07
5000	6	4	15	7	3	.1829359531421E-08	.2675912953227E-07
6000	6	4	15	7	4	.2235445705798E-08	.2870332061481E-07
7000	6	4	15	7	4	.2645076128657E-08	.3048206525096E-07
8000	6	4	15	7	4	.3057045953946E-08	.3213473213282E-07
9000	6	4	15	7	5	.3471199432905E-08	.3368440941675E-07
10000	6	4	15	7	6	.3887257193005E-08	.3514527161565E-07
TOTAL	60	40	150	70	.32(seconds)	proc= 66.67%	

21 SCALCG Algorithm: Generalized PSC1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	326	194	1732	226	485	.9987220414473E+03	.1506666230480E-05
2000	1114	871	18367	906	9897	.1998722041444E+04	.1153450272682E-05
3000	982	853	21749	854	17736	.2998722041465E+04	.1873444094225E-05
4000	1427	1221	29012	1242	31495	.3998722041461E+04	.1392012215614E-05
5000	955	712	11564	744	15468	.4998722041472E+04	.1524762156169E-05
6000	527	450	11961	477	18636	.5998722041460E+04	.1035489876664E-05
7000	685	628	17655	642	33469	.6998722041453E+04	.1907361509186E-05
8000	1022	842	19008	877	41762	.7998722041441E+04	.1211604632885E-05
9000	1118	955	22309	967	55530	.8998722041517E+04	.2067011870011E-05
10000	1530	1389	36389	1371	99404	.9998722041522E+04	.2155825987249E-05
TOTAL	9686	8115	189746	8306	3238.82(seconds)	proc= 83.78%	

22 SCALCG Algorithm: Extended PSC1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	6	5	15	7	2	.3865995282467E+03	.3269898458045E-07
2000	6	5	15	7	5	.7731990564934E+03	.4018695357111E-07
3000	6	5	15	7	8	.1159798584740E+04	.4209072223365E-07
4000	6	5	15	7	10	.1546398112987E+04	.4274101731579E-07
5000	6	5	15	7	13	.1932997641234E+04	.4297998082678E-07
6000	6	5	15	7	15	.2319597169480E+04	.4304129843733E-07
7000	6	5	15	7	18	.2706196697727E+04	.4298740556482E-07
8000	6	5	15	7	20	.3092796225974E+04	.4295925702824E-07
9000	6	5	15	7	23	.3479395754220E+04	.4270036508082E-07
10000	6	5	15	7	25	.3865995282467E+04	.4270090308732E-07
TOTAL	60	50	150	70	1.39(seconds)	proc= 83.33%	

23 SCALCG Algorithm: Extended Powell Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	60	30	108	45	7	.9399047374464E-07	.1107919563044E-04
2000	70	31	128	56	15	.5684136814500E-06	.1310427511808E-04
3000	60	30	110	47	20	.5240906079154E-07	.1051135575034E-04
4000	81	35	156	72	37	.5930925422064E-07	.1105929078932E-04
5000	32	15	63	29	18	.4627868574426E-06	.2892443192254E-04
6000	50	25	94	42	33	.5659961500338E-06	.4137859609774E-04
7000	34	13	66	30	27	.2351214378686E-06	.3801375316314E-04
8000	40	23	75	33	34	.1501009296557E-05	.3521136688820E-04
9000	41	26	74	31	37	.2785107188619E-06	.1849582911059E-04
10000	51	23	98	44	57	.3255651805464E-07	.3160608821994E-04
TOTAL	519	251	972	429	2.85(seconds)	proc= 48.36%	

24 SCALCG Algorithm: Extended Block-Diagonal BD1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	19	16	36	13	2	.8760940456074E-10	.1005212699666E-05
2000	16	14	32	12	3	.5657566910493E-09	.1474521493125E-04
3000	16	13	31	11	5	.2339468487078E-08	.2653966334531E-04
4000	17	15	33	12	7	.2097852939037E-08	.2400760083377E-04
5000	21	18	36	12	10	.4257084441851E-09	.7320029483832E-05
6000	21	17	38	14	13	.3087360048158E-08	.1141187487206E-04
7000	15	13	29	11	11	.3317670213746E-06	.4355130970884E-04
8000	15	13	31	12	14	.5261002287777E-09	.2409367484675E-04
9000	19	17	37	14	18	.2302897725944E-08	.7676521764535E-04
10000	21	20	41	15	22	.5774978617982E-09	.1915154781782E-04
TOTAL	180	156	344	126	1.05(seconds)	proc= 86.67%	

25 SCALCG Algorithm: Extended Maratos Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	41	34	90	34	3	-.5003121103430E+03	.7522166713887E-05
2000	46	40	101	38	8	-.1000624220697E+04	.4023762875023E-07
3000	46	40	99	35	11	-.1500936331045E+04	.2416323758034E-06
4000	44	38	89	32	13	-.2001248441393E+04	.5331577795061E-07
5000	46	36	102	38	19	-.2501560551742E+04	.1076191845991E-06
6000	42	34	92	35	21	-.3001872662090E+04	.1813382282840E-08
7000	43	38	101	38	26	-.3502184772439E+04	.3088977645538E-06
8000	42	36	91	34	27	-.4002496882436E+04	.5075444917226E-04
9000	44	39	96	34	32	-.4502808993135E+04	.4425176356910E-04
10000	40	33	91	32	34	-.5003121103484E+04	.7121108616193E-08
TOTAL	434	368	952	350	1.94(seconds)	proc= 84.79%	

26 SCALCG Algorithm: Extended Cliff Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	25	22	49	7	2	.9989330683920E+02	.8565841655232E-09
2000	35	32	70	9	6	.1997866136780E+03	.1312158545345E-06
3000	39	36	58	9	7	.2996799573824E+03	.1280968267680E-04
4000	18	15	30	9	6	.3995732273660E+03	.3974436668363E-04
5000	16	13	27	8	6	.4994666351522E+03	.3169805654301E-04
6000	14	11	23	6	6	.6005924709065E+03	.3287337996582E-04
7000	19	16	33	11	10	.6992531478754E+03	.3368259286605E-05
8000	17	15	28	8	10	.7991470721760E+03	.1787129110067E-04
9000	16	13	33	7	13	.8990401583159E+03	.3999224617503E-04
10000	17	14	34	8	14	.9989330684638E+03	.4041074561979E-06
TOTAL	216	187	385	82	.80(seconds)	proc= 86.57%	

27 SCALCG Algorithm: Quadratic Diagonal Perturbed Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	117	35	192	73	10	.3211734128789E-10	.7581780512992E-05
2000	168	46	273	103	29	.3682490591171E-10	.7993707658639E-05
3000	264	100	416	150	65	.3530954590105E-10	.7358334713451E-05
4000	316	101	509	191	106	.2328623617036E-10	.1265909320306E-04
5000	365	120	580	213	151	.2529480599941E-10	.7262068310036E-05
6000	294	89	475	179	149	.3174547368090E-10	.7103312598441E-05
7000	381	112	632	249	228	.2590630357923E-10	.7735841955295E-05
8000	434	142	703	267	293	.1358529714910E-10	.9029739523550E-05
9000	423	123	677	252	319	.2872192127721E-10	.6107670846104E-05
10000	414	110	678	262	356	.2303935384637E-10	.1323505482153E-04
TOTAL	3176	978	5135	1939	17.06(seconds)	proc= 30.79%	

28 SCALCG Algorithm: Extended Wood Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	35	16	65	28	6	.1108443957226E-07	.5600942708815E-05
2000	38	18	70	30	13	.7936115673205E-07	.6597963074326E-06
3000	51	29	89	36	26	.3591832084194E-09	.1680806260987E-05
4000	29	15	58	27	21	.8298643197030E-08	.1070677640254E-05
5000	38	19	71	31	34	.3267065465643E-09	.2518332686647E-04
6000	30	13	59	27	34	.4892182496493E-08	.3906776727074E-07
7000	28	12	56	26	37	.4104099583616E-08	.1991626051348E-06
8000	28	12	56	26	42	.1036913289749E-06	.6024323449787E-04
9000	41	18	78	35	67	.9175008658101E-11	.4435853647820E-05
10000	25	12	50	23	47	.9336068215892E-09	.3600331404370E-04
TOTAL	343	164	652	289	3.27(seconds)	proc= 47.81%	

29 SCALCG Algorithm: Extended Hiebert Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	59	55	118	39	4	.4137878583709E-09	.1446678065617E-05
2000	51	46	113	44	9	.1388401473170E-07	.2598755202052E-05
3000	55	48	121	46	14	.1360014919857E-11	.4441708294991E-09
4000	57	52	110	41	17	.1694248195242E-08	.1229464554697E-05
5000	55	52	116	45	22	.6996017072519E-07	.1034426139169E-04
6000	52	47	118	44	27	.1267575053361E-08	.5731535950087E-06
7000	57	51	115	46	33	.6558320539180E-12	.6646853998098E-09
8000	51	48	114	45	35	.3870813584291E-10	.5406708449246E-08
9000	53	50	108	43	37	.1175458499843E-09	.6541381179638E-06
10000	55	51	114	43	44	.8411702304802E-07	.2342079088666E-04
TOTAL	545	500	1147	436	2.42(seconds)	proc= 91.74%	

30 SCALCG Algorithm: Quadratic QF1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	302	156	392	88	9	-.4999999991621E-03	.3926352225959E-05
2000	407	190	520	111	26	-.2499999996438E-03	.3890632633362E-05
3000	524	234	681	155	49	-.1666666663606E-03	.6075127876958E-05
4000	585	247	751	164	74	-.1249999992791E-03	.4584848503857E-05
5000	744	339	959	213	116	-.9999999966119E-04	.5810598325607E-05
6000	693	316	892	197	129	-.8333333284977E-04	.5211938078014E-05
7000	855	386	1127	270	188	-.7142857101357E-04	.7469840694459E-05
8000	932	407	1217	283	235	-.6249999987644E-04	.5229500127146E-05
9000	922	445	1182	258	254	-.5555555524653E-04	.7226949101133E-05
10000	909	422	1193	282	283	-.4999999955135E-04	.1111528557485E-04
TOTAL	6873	3142	8914	2021	13.63(seconds)	proc= 45.72%	

31 SCALCG Algorithm: Extended Quadratic Penalty QP1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	6	5	19	7	0	.3990006250001E+04	.3678566829301E-06
2000	6	4	19	7	2	.7990003125003E+04	.7467254228428E-06
3000	6	4	18	7	2	.1199000208333E+05	.2179004501377E-06
4000	2001	1998	67034	2000	9170	.1599000156250E+05	.1741272995779E-04
5000	29	28	693	30	119	.1999000125000E+05	.3073612036328E-05
6000	6	5	21	7	5	.2399000104167E+05	.2962640573704E-07
7000	6	5	21	7	6	.2799000089286E+05	.1333536206989E-06
8000	6	4	21	7	6	.3199000078125E+05	.8501975024581E-06
9000	2001	1999	67065	2001	20647	.3599000069444E+05	.3690587033719E-05
10000	7	6	25	8	9	.3999000062500E+05	.1610075098290E-05
TOTAL	4074	4058	134936	4081	299.66(seconds)	proc= 99.61%	

32 SCALCG Algorithm: Extended Quadratic Penalty QP2 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	24	21	62	21	5	.2757817486988E-10	.1409888026814E-06
2000	27	24	65	22	10	.1810477118213E-13	.3212641272622E-09
3000	34	29	85	30	20	.9789240899379E-10	.7108177585290E-06
4000	30	27	78	26	24	.2604104517712E-12	.6010212321212E-08
5000	31	27	81	27	32	.9059749692321E-12	.8984925132878E-08
6000	26	22	82	22	39	.5882626599660E-07	.3811116774113E-06
7000	31	27	63	25	36	.1635293539139E-07	.6425286432234E-06
8000	31	27	79	24	50	.1519122963801E-10	.1258490399104E-06
9000	30	27	87	29	61	.5424794126139E-12	.1179961593906E-06
10000	33	25	84	28	67	.3147466757195E-08	.1225260215422E-06
TOTAL	297	256	766	254	3.44(seconds)	proc= 86.20%	

33 SCALCG Algorithm: Quadratic QF2 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	332	158	431	97	42	-.1000124968765E+01	.3722107068369E-05
2000	474	231	622	146	122	-.1000062492189E+01	.5647602102149E-05
3000	622	297	818	194	242	-.1000041663195E+01	.6158368849581E-05
4000	649	282	837	186	331	-.1000031248047E+01	.5152778485714E-05
5000	789	343	1013	222	502	-.1000024998750E+01	.5342161382280E-05
6000	974	450	1281	305	751	-.1000020832465E+01	.3728978318489E-05
7000	871	384	1141	268	786	-.1000017856505E+01	.4050135037802E-05
8000	1059	473	1387	326	1086	-.1000015624512E+01	.6817633215075E-05
9000	1182	516	1567	383	1375	-.1000013888503E+01	.4188552222629E-05
10000	1124	500	1469	342	1423	-.1000012499687E+01	.4323581046914E-05
TOTAL	8076	3634	10566	2469	66.60(seconds)	proc= 45.00%	

34 SCALCG Algorithm: Extended EP1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	0	0	3	1	0	.8000000000000E+04	.4133425269579E-03
2000	2	1	6	2	1	.1586352576295E+05	.1185543339228E-08
3000	2	1	6	2	0	.2379528864442E+05	.2225548739908E-10
4000	2	1	6	2	1	.3172705152589E+05	.2620573871782E-10
5000	2	1	6	2	1	.3965881440736E+05	.1529755802112E-09
6000	2	1	6	2	1	.4759057728884E+05	.2073590669368E-09
7000	2	1	6	2	1	.5552234017031E+05	.1121914841985E-09
8000	1	0	4	1	1	.6351946072431E+05	.3908993432603E-04
9000	2	1	6	2	1	.7138586593325E+05	.2528642697408E-09
10000	3	2	7	2	2	.7931762881473E+05	.6092834570204E-10
TOTAL	18	9	56	18	.09(seconds)	proc= 50.00%	

35 SCALCG Algorithm: Extended Tridiagonal 2 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	30	16	49	17	43	.3893393944764E+03	.2434708650701E-05
2000	31	19	49	16	5	.7790685180764E+03	.2535634230713E-05
3000	31	15	48	15	10	.1168797641676E+04	.3159313264634E-05
4000	29	11	51	19	21	.1558526765277E+04	.3028711125082E-05
5000	32	21	55	20	13	.1948255888877E+04	.2736556024452E-05
6000	31	12	51	17	17	.2337985012477E+04	.3255345754633E-05
7000	32	23	50	14	17	.2727714136076E+04	.3496196806945E-05
8000	29	18	48	15	19	.3117443259676E+04	.3196952162236E-05
9000	32	18	60	22	26	.3507172383276E+04	.1275369954284E-05
10000	33	20	57	19	29	.3896901506876E+04	.2116988280023E-05
TOTAL	310	173	518	174	2.00(seconds)	proc= 55.81%	

36 SCALCG Algorithm: BDQRTIC (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	997	932	25754	959	4951	.3983817950577E+04	.1282988926578E-05
2000	2001	1937	52452	1939	20262	.7989427682541E+04	.9664016615065E-05
3000	2001	1918	54641	1923	31652	.1199503741450E+05	.3628035660216E-04
4000	1391	1316	34264	1339	26450	.1600064714647E+05	.1317504098355E-05
5000	2001	1877	46876	1859	45307	.2000625687843E+05	.2003770634221E-04
6000	2001	1922	53947	1948	62783	.2401186661040E+05	.5835843203006E-03
7000	2001	1936	52588	1931	71290	.2801747634236E+05	.4034787767062E-04
8000	2001	1915	52212	1948	80652	.3202308607433E+05	.8056826167135E-04
9000	2001	1924	53260	1939	92797	.3602869580629E+05	.2084494481686E-03
10000	2001	1917	51487	1929	99698	.4003430553826E+05	.3720286283440E-02
TOTAL	18396	17594	477481	17714	5358.42(seconds)	proc= 95.64%	

37 SCALCG Algorithm: TRIDIA (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	1026	468	1352	324	70	.5853071663863E-13	.5541964758244E-05
2000	1688	749	2206	516	231	.3388612576577E-12	.6670948415898E-05
3000	1903	849	2498	593	393	.3519250266911E-12	.9222743327052E-05
4000	2001	907	2596	594	542	.1322155620822E-09	.6723232621627E-04
5000	2001	870	2642	640	691	.9060270285521E-08	.6305334258624E-03
6000	2001	911	2608	606	817	.5243843995551E-07	.1540176906704E-01
7000	2001	951	2588	586	942	.6336664199408E-06	.9260458478134E-02
8000	2001	912	2616	614	1088	.3831835917026E-06	.6816416913847E-02
9000	2001	880	2592	590	1224	.2468870841676E-05	.1843159289133E-01
10000	2001	896	2604	602	1359	.2242407590063E-03	.1540346621766E+00
TOTAL	18624	8393	24302	5665	73.57(seconds)	proc= 45.07%	

38 SCALCG Algorithm: ARWHEAD (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	4	3	10	4	2	.8592374858493E-11	.2324697006873E-05
2000	7	5	16	7	6	.1083660071399E-15	.1395151759267E-07
3000	6	4	14	5	8	.2076096998309E-12	.6526961125252E-06
4000	7	5	16	6	12	.8671448975539E-15	.4692690832263E-06
5000	9	7	20	8	18	.2682863696826E-13	.8978766795665E-06
6000	6	4	15	6	17	.1440079164857E-10	.1161284468249E-06
7000	7	5	36	7	47	.3794165502613E-15	.9758398545238E-06
8000	9	7	82	9	121	.4336266588856E-15	.9467028147238E-06
9000	6	4	16	6	27	.4878367675099E-15	.1215294053845E-06
10000	33	31	732	33	1363	.0000000000000E+00	.2649621001411E-06
TOTAL	94	75	957	91	16.21(seconds)	proc= 79.79%	

39 SCALCG Algorithm: NONDIA (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	10	7	21	8	2	.1384019442201E-11	.1905825289505E-06
2000	8	5	18	6	4	.9834144151522E-10	.9753180923787E-07
3000	10	7	24	8	9	.1038610159841E-14	.6656833649309E-10
4000	8	5	18	6	8	.2030042795692E-12	.4914020274514E-06
5000	8	5	18	6	11	.6073087955801E-14	.6662221531830E-09
6000	8	5	18	6	13	.2439973751217E-12	.2930983901657E-08
7000	8	5	19	6	16	.2012270982990E-14	.6219930470688E-09
8000	7	4	16	6	15	.3397188365684E-17	.6279421427280E-12
9000	7	4	16	6	17	.2613508542484E-15	.2511768570912E-11
10000	7	4	16	6	19	.3636094635261E-17	.4444475182242E-09
TOTAL	81	51	184	64	1.14(seconds)	proc= 62.96%	

40 SCALCG Algorithm: NONDQUAR (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	1726	488	3033	1304	398	.3859383364048E-05	.3884060440077E-05
2000	1576	488	2752	1171	723	.4202367271227E-05	.4047695350870E-05
3000	1520	424	2690	1165	1068	.5639933914895E-05	.4679560752918E-05
4000	1582	434	2817	1227	1480	.4685432221372E-05	.4127931882092E-05
5000	1979	566	3522	1533	2322	.3099420100332E-05	.4133844427966E-05
6000	1918	553	3379	1444	2679	.3344271106053E-05	.3347684399674E-05
7000	1923	593	3366	1436	3101	.4153446903416E-05	.4476292789354E-05
8000	1908	528	3406	1486	3591	.4093017396603E-05	.4331246255162E-05
9000	2001	574	3569	1558	4227	.4446350514237E-05	.4347735988376E-04
10000	2001	586	3573	1553	4703	.3884126673953E-05	.7851098977009E-04
TOTAL	18134	5234	32107	13877	242.92(seconds)	proc= 28.86%	

41 SCALCG Algorithm: DQDRTIC (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	6	1	15	7	1	.2690733071101E-12	.2616143437881E-06
2000	5	0	13	6	2	.3205058487285E-06	.1097363351774E-05
3000	5	0	13	6	4	.1463338060027E-05	.8675843936239E-06
4000	6	0	15	7	6	.1986321745046E-13	.1667223317666E-06
5000	5	0	13	6	6	.1134095052308E-04	.4578064177855E-06
6000	6	0	15	7	9	.8846555512640E-13	.3519708312679E-06
7000	6	0	15	7	10	.4057700558759E-13	.2383196116795E-06
8000	6	0	15	7	11	.5404785418246E-13	.2753405645698E-06
9000	6	0	15	7	13	.5858740324626E-13	.2867171021205E-06
10000	6	0	15	7	15	.9132084737500E-14	.1132892816354E-06
TOTAL	57	1	144	67	.77(seconds)	proc= 1.75%	

42 SCALCG Algorithm: EG2 (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	131	86	606	108	27	-.9989473933009E+03	.1086438261538E-05
2000	554	478	10379	529	863	-.1998947392786E+04	.8362910211384E-06
3000	2001	1939	53346	1962	6616	-.2998947392615E+04	.1798356491928E-03
4000	2001	1956	52393	1957	8674	-.3998947391649E+04	.1315703365322E-04
5000	2001	1940	51643	1901	10710	-.4998947392478E+04	.9069302678833E-04
6000	426	359	4676	369	1193	-.5998947392431E+04	.1151846728157E-05
7000	2001	1962	57340	1978	16629	-.6998947392419E+04	.8800275390530E-05
8000	2001	1946	59198	1966	19631	-.7998947380386E+04	.1621907610114E-02
9000	2001	1929	51200	1941	19147	-.8998947392293E+04	.9059608377955E-03
10000	2001	1957	57400	1966	23784	-.9998947391251E+04	.6487451587343E-03
TOTAL	15118	14552	398181	14677	1072.74(seconds)	proc= 96.26%	

43 SCALCG Algorithm: DIXMAANA (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	5	3	12	5	3	.1000000026174E+01	.2223662629183E-06
2000	6	3	14	6	7	.1000000000089E+01	.5769944663313E-07
3000	5	3	12	5	9	.1000000102032E+01	.6169026526619E-06
4000	5	3	12	5	12	.1000000148788E+01	.8512989770882E-06
5000	6	3	14	6	18	.1000000000120E+01	.3823921916930E-07
6000	5	3	12	5	18	.1000000234278E+01	.1164759166058E-05
7000	5	3	12	5	21	.1000000283896E+01	.1343819249882E-05
8000	6	3	14	6	28	.1000000000131E+01	.3119681935295E-07
9000	5	3	12	5	28	.1000000372727E+01	.1599134636300E-05
10000	5	3	12	5	31	.1000000423717E+01	.1749751440859E-05
TOTAL	53	30	126	53	1.75(seconds)	proc= 56.60%	

44 SCALCG Algorithm: DIXMAANB (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	10	9	19	7	4	.1000000000236E+01	.1738545099438E-06
2000	10	9	19	7	10	.1000000002548E+01	.1525205445265E-05
3000	10	9	19	7	14	.1000000005682E+01	.1400754080188E-05
4000	10	9	19	7	19	.1000000009662E+01	.7113855951713E-06
5000	10	9	19	7	23	.1000000013570E+01	.4748347257673E-06
6000	10	9	19	7	28	.1000000016988E+01	.5878384893616E-06
7000	10	9	19	7	33	.1000000020802E+01	.1200985207687E-05
8000	10	9	19	7	38	.1000000024607E+01	.1786398043519E-05
9000	10	9	19	7	43	.1000000028081E+01	.2034366608496E-05
10000	10	9	19	7	47	.1000000031860E+01	.2515785696683E-05
TOTAL	100	90	190	70	2.59(seconds)	proc= 90.00%	

45 SCALCG Algorithm: DIXMAANC (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	13	12	25	10	6	.1000000000122E+01	.6246401517636E-07
2000	13	12	24	9	12	.1000000006955E+01	.3709144602024E-05
3000	13	12	24	9	18	.1000000005689E+01	.3051846008720E-05
4000	13	12	24	9	24	.1000000000491E+01	.3408870983529E-06
5000	13	12	24	9	30	.1000000000426E+01	.1141684480423E-05
6000	13	11	24	9	36	.1000000000045E+01	.2450291217678E-06
7000	14	12	26	10	45	.1000000000011E+01	.5232536795647E-07
8000	14	11	26	10	53	.1000000000007E+01	.1354614123898E-07
9000	14	11	26	10	58	.1000000000016E+01	.5053697566688E-08
10000	14	12	26	10	65	.1000000000051E+01	.2921590334300E-07
TOTAL	134	117	249	95	3.47(seconds)	proc= 87.31%	

46 SCALCG Algorithm: DIXMAANE (CUTE) Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	199	86	257	56	81	.1000000000280E+01	.3051555652899E-05
2000	284	140	363	77	228	.1000000000232E+01	.3175764945361E-05
3000	316	155	422	104	396	.1000000000967E+01	.5054714719226E-05
4000	385	173	513	126	643	.1000000000510E+01	.6682804165459E-05
5000	363	165	467	102	734	.1000000000614E+01	.5625389271329E-05
6000	343	159	448	103	844	.1000000001228E+01	.5120657986454E-05
7000	423	177	561	136	1234	.1000000001426E+01	.4826584189787E-05
8000	488	241	622	132	1563	.1000000000659E+01	.6067583292346E-05
9000	454	209	604	148	1705	.1000000003199E+01	.1258729241355E-04
10000	517	234	680	161	2135	.1000000002922E+01	.7353050645565E-05
TOTAL	3772	1739	4937	1145	95.63(seconds)	proc= 46.10%	

47 SCALCG Algorithm: Partial Perturbed Quadratic PPQ1 Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	225	80	346	119	338	.3453756165738E-12	.5901033157895E-05
2000	232	66	375	141	1445	.1684066559492E-12	.6505472082225E-05
3000	212	63	332	118	2865	.4004742810646E-12	.1291461468861E-04
4000	158	43	255	95	3900	.3531256968068E-12	.1314484888787E-04
5000	73	20	123	48	2942	.4785864610889E-12	.4324744514892E-04
6000	59	23	95	34	3272	.3625269290175E-12	.1659689291929E-04
7000	31	8	58	25	2723	.2811731579221E-12	.1685275862610E-04
8000	28	5	53	23	3250	.7944306092717E-13	.2139221738814E-04
9000	23	5	46	21	3571	.1208801372166E-12	.2601349988693E-04
10000	19	3	39	18	3739	.1836046728195E-12	.3598105859762E-04
TOTAL	1060	316	1722	642	280.45(seconds)	proc= 29.81%	

48 SCALCG Algorithm: Broyden Tridiagonal Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	36	18	66	25	1	.2798594531736E-12	.2572234731817E-05
2000	63	26	95	28	6	.3970671034879E+00	.4179152057597E-05
3000	61	33	94	29	8	.3970671034881E+00	.2733422646465E-05
4000	60	32	93	29	10	.3970671034880E+00	.2600400026134E-05
5000	62	33	94	28	12	.3970671034877E+00	.2016484142081E-05
6000	63	32	95	28	16	.3970671034877E+00	.2095315243996E-05
7000	59	32	88	25	16	.3970671034878E+00	.3234437283131E-05
8000	65	35	103	34	22	.3970671034878E+00	.2042657813489E-05
9000	60	30	97	33	22	.3970671034878E+00	.3235682632805E-05
10000	65	34	102	33	27	.3970671034877E+00	.3337506425313E-05
TOTAL	594	305	927	292	1.40(seconds)	proc= 51.35%	

49 SCALCG Algorithm: Almost Perturbed Quadratic Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	299	138	382	81	10	.1945881002768E-12	.4224333514533E-05
2000	447	211	577	128	29	.1735039570946E-12	.4380303324208E-05
3000	486	235	634	146	46	.2734178453824E-12	.4909665989944E-05
4000	643	300	835	190	84	.2821328695651E-12	.6822838794597E-05
5000	686	329	874	186	109	.2093289660789E-12	.7226838940624E-05
6000	665	312	864	197	129	.2498137887416E-12	.5110749342935E-05
7000	905	396	1189	282	209	.1023197469764E-12	.4150021903296E-05
8000	963	410	1265	300	256	.1069119004692E-12	.6646541016396E-05
9000	911	425	1171	258	264	.7379739643244E-13	.5741492443220E-05
10000	1027	484	1338	309	332	.2691204381151E-12	.9100026356016E-05
TOTAL	7032	3240	9129	2077	14.68(seconds)	proc= 46.08%	

50 SCALCG Algorithm: Tridiagonal Perturbed Quadratic Function

Powell criterion for restart. Stoptest = 1

n	iter	irs	fgcnt	lscnt	time(c)	fxnew	gnorm
theta spectral							
1000	282	124	379	95	21	.3226340498672E-12	.3281700696699E-05
2000	409	186	521	110	56	.2710019823494E-12	.5574166689382E-05
3000	488	241	630	140	100	.1003627740720E-12	.5926301564299E-05
4000	570	259	753	181	161	.2838208354041E-12	.6479638053769E-05
5000	644	276	812	166	223	.2319932583764E-12	.6242936411481E-05
6000	766	333	988	220	320	.2732046636538E-12	.4430921561494E-05
7000	753	347	987	232	370	.3562759782395E-12	.9705125351763E-05
8000	924	411	1201	275	517	.2598011768788E-12	.5733612274922E-05
9000	841	375	1084	241	526	.3229756504887E-12	.6166904977314E-05
10000	1057	485	1361	302	732	.1848552998545E-12	.6703523299569E-05
TOTAL	6734	3037	8716	1962	30.26(seconds)	proc= 45.10%	

****
SCALCG - conjugate gradient package
theta spectral
Powell restart
stoptest = 1 : $\|\nabla f(x_k)\|_\infty \le 10^{-6}$
****