

A Comprehensive Computational Results

Tables ??, ??, and ?? present exhaustive computational results for large (those requiring ≥ 1 minute of run time), medium (those requiring between 1 minute and 0.1 seconds of run time), and small (those requiring < 0.1 seconds of run time) instances, respectively. In each table, the first three columns give the name (or index from SJ database), dimension, and number of nonzeros in each matrix. Column 4 gives the run time of the selected pivoting scheme tol 0. Lastly, columns 5, 6, 7, and 8 give the relative run time of small, large, diag, and tol 0.1 pivoting, respectively.

Matrix Name	n	nnz	tol 0 run time (s)	Relative Run Time				
				small	large	diag	tol 0.1	
350	6774	33744	37446.9	0.96	2.00	2.25	0.84	
367	7337	156508	36428.4	1.01	1.66	1.01	1.00	
696	14454	147972	35205.6	0.99	2.45	1.08	1.00	
695	14454	147972	34811.8	1.00	2.48	1.11	1.01	
213	3402	130371	29913.4	1.00	2.09	0.14	1.04	
352	5773	71701	29133.3	1.00	2.64	1.58	1.11	
119	3251	65875	27139.8	1.00	3.18	1.57	0.96	
344	3363	99471	26520.3	1.00	3.05	1.76	0.95	
337	5321	65693	24280.1	1.01	3.56	1.10	0.48	
117	3973	79077	23425.2	1.00	2.69	1.64	1.00	
346	7055	30082	22870.2	0.99	1.03	1.02	1.12	
347	7055	30082	21941.5	1.00	1.02	1.01	1.18	
140	3937	25407	18202.5	1.00	1.75	1.39	1.01	
221	4257	37465	16199.7	0.93	1.47	1.46	0.98	
222	4257	37465	16172.9	0.94	1.46	1.46	0.98	
223	4257	37465	16169.0	0.93	1.46	1.47	0.98	
142	3937	25407	15886.7	0.98	1.98	1.37	0.99	
341	2880	18229	15287.3	1.00	2.91	1.58	0.81	
349	4101	82682	12733.3	1.00	1.77	1.04	0.99	
pilot87.pre	1540	30916	9707.8	1.00	5.38	1.56	1.00	
118	2568	75628	7847.5	1.00	2.28	1.31	0.86	
pilot87	1625	31396	6666.3	1.00	5.05	1.56	0.99	
gen4	375	8919	4487.8	1.00	2.39	1.51	1.00	
217	4720	20042	4169.6	1.00	2.79	2.75	1.00	
self	924	157411	4157.9	1.00	1.38	0.77	1.00	
gen4.pre	367	9322	4043.2	1.01	2.55	1.40	1.00	
slptsk	2315	34430	3290.8	1.00	1.62	1.29	1.00	
gen1	329	11016	2665.3	1.00	4.63	1.85	1.00	
207	1919	32399	2029.3	1.00	1.90	1.35	1.00	
335	6747	29195	1973.1	1.00	0.58	1.00	1.00	
87	2500	12349	1611.3	1.02	2.49	2.31	1.18	
pla8_sig185	39835	196256	1030.4	1.33	6.94	0.94	1.09	
355	1409	42760	834.0	1.00	1.65	1.60	1.00	
159	1050	26198	742.0	0.99	0.71	0.59	1.06	
pilot	1132	16624	602.3	1.00	5.39	1.34	1.00	
maros-r7	1350	31923	517.1	1.01	0.11	1.47	1.00	
320	1733	22189	498.2	1.00	1.25	1.08	1.01	
stat96v4	3139	23752	388.3	1.00	1.41	1.51	1.00	
pla85900.nov21	40304	230558	370.5	1.12	5.74	0.96	1.04	
153	765	24382	340.9	1.00	1.18	1.16	1.00	
58	3083	11767	337.0	1.00	1.08	1.03	1.00	
momentum3	3254	15159	321.7	1.00	5.58	1.00	1.00	
jendrec1	1779	34196	247.2	1.00	1.61	1.10	1.00	
296	1258	7682	239.7	1.00	1.44	1.01	1.00	

			Relative Run Time				
Matrix Name	n	nnz	tol 0 run time (s)	small	large	diag	tol 0.1
brd14051	16360	180847		184.4	0.94	19.37	1.05
fome13	24884	70839		184.1	0.95	15.03	1.23
240	1000	1000000		161.3	1.00	1.06	0.96
236	1000	1000000		143.1	1.00	1.10	1.00
mod2.pre	4422	12914		137.7	1.00	2.19	1.13
260	1000	1000000		134.1	0.99	1.07	1.03
world	4261	12190		130.5	1.05	2.64	1.17
l30	2492	12653		128.8	1.00	2.16	1.00
340	8765	42471		109.4	0.99	0.89	0.88
cont11.l	58936	179556		108.3	0.98	0.84	0.98
mod2	4435	12985		104.4	1.00	2.52	1.11
309	2837	10967		95.1	1.00	1.22	0.99
314	2836	10965		94.6	1.00	1.23	1.00
232	1000	1000000		86.2	1.01	1.70	1.60
gen2	328	8894		81.2	1.00	1.70	1.59
scfxm1-2r-256	11812	44985		66.8	1.01	1.21	1.03

Table 1: Comprehensive Results: Large Instances

			Relative Run Time				
Matrix Name	n	nnz	tol 0 run time (s)	small	large	diag	tol 0.1
nemswrld	2205	13323		53.50	1.02	2.20	1.02
cont4	2802	11862		44.81	1.00	1.79	1.07
rat5	902	12026		40.77	1.00	2.50	1.32
nug30	14681	45627		37.07	0.94	58.78	1.88
nug20	7733	31455		35.20	0.98	53.50	4.31
stat96v1	5013	20325		34.16	1.18	67.21	0.98
stat96v2	12928	48009		32.85	0.91	9.45	0.94
210	1484	6110		29.97	1.01	0.85	0.92
pla33810	18940	123445		29.57	0.85	5.37	1.08
stat96v3	13485	49917		27.62	0.94	7.57	1.04
nug15	5486	24736		26.99	0.87	28.01	3.25
pilot.ja	567	3781		25.13	1.00	5.37	2.78
model10	1341	6403		24.62	1.01	3.02	1.05
rat7a	641	10542		18.88	1.00	1.78	1.56
d2q06c	1047	5717		18.27	1.00	1.15	1.49
128	760	5739		18.26	1.00	0.94	0.74
d15112	9197	47335		17.95	1.00	11.58	1.01
141	511	2796		16.60	1.00	1.81	1.45
144	511	2796		16.49	0.99	1.57	1.56
progas	1167	6500		14.19	1.00	2.80	1.05
co9	2287	13481		13.06	1.00	5.77	1.15
stat96v5	812	3795		13.00	1.06	1.12	1.02

			Relative Run Time				
Matrix Name	n	nnz	tol 0 run time (s)	small	large	diag	tol 0.1
l30.pre	1199	6030		12.56	1.00	2.32	1.02
scfxm1-2b-64	5966	22682		12.11	1.00	1.22	1.04
158	416	8562		12.08	0.99	1.97	1.03
scfxm1-2r-128	5671	21943		11.80	1.00	1.25	1.05
332	4101	36879		11.67	1.00	1.32	1.26
NSR8K	5387	46157		11.62	0.89	27.59	1.76
qap12	2740	12014		10.96	1.10	6.11	1.41
newman2	468	7917		10.85	1.00	8.93	1.18
watson_1	5729	14544		9.00	1.15	1.55	0.99
209	415	2779		8.66	0.99	1.16	1.16
pilotnov	549	3337		8.64	1.01	4.68	1.23
239	500	250000		8.38	1.00	1.11	0.99
momentum2	2113	6516		8.35	0.99	6.52	1.00
238	200	40000		8.32	0.99	1.03	1.02
pilot4	289	2805		7.75	1.00	1.81	1.47
235	500	250000		7.52	1.00	1.11	1.00
231	500	250000		7.43	1.29	1.08	1.02
dbic1	4795	23403		7.18	0.98	24.42	1.09
perold	440	2584		7.13	1.01	2.91	2.16
259	500	250000		7.12	1.00	1.13	1.09
watson_1.pre	4642	12991		7.05	1.18	1.45	1.00
cont1_l	1070	4649		6.23	0.97	1.60	1.17
scfxm1-2r-96	4504	17205		6.22	1.00	1.24	1.06
126	1220	5884		5.99	1.00	0.87	1.34
291	1220	5860		5.91	1.00	0.76	1.18
212	882	3354		5.87	0.95	0.89	1.17
125	1220	5892		5.69	0.97	0.69	1.18
nug12	2736	12037		5.62	1.13	8.35	1.90
288	1220	5852		5.55	1.00	0.77	1.14
pcb3038	3588	46560		5.41	0.84	18.72	1.78
127	1220	5855		5.39	1.04	0.77	1.36
model11	2039	7606		5.28	1.01	1.44	1.02
294	1220	5892		5.20	0.96	0.76	1.18
287	1220	5888		4.65	0.98	0.80	1.10
289	1220	5884		4.39	0.98	0.69	1.07
292	1220	5888		4.29	1.04	0.83	1.15
nemspmm2	949	6478		4.24	1.09	3.08	1.15
211	768	2934		4.01	1.00	0.94	1.05
293	1220	5892		3.40	0.99	0.76	1.10
stormg2_1000.pre	13926	32547		3.27	2.10	1.29	1.01
124	1220	5892		2.91	1.02	0.99	1.24
stormg2_1000	14075	32597		2.90	1.84	1.32	1.00
152	180	2659		2.60	1.02	0.98	0.71
fome12	12652	35969		2.53	0.99	9.31	1.36

Matrix Name	n	nnz	tol 0 run time (s)	Relative Run Time				
				small	large	diag	tol 0.1	
nl	890	2919		2.46	1.02	2.97	1.61	1.03
fnl4461	5044	46977		2.36	1.10	13.36	1.22	1.15
model6	790	3425		2.35	0.99	2.00	1.01	0.97
scfxm1-2r-64	1870	11122		2.31	1.02	1.25	1.02	1.01
co5	928	6173		2.26	1.01	8.86	1.16	1.00
pla7397	5059	42683		2.17	0.90	9.43	0.99	1.06
nemspmm1	982	5023		2.12	1.10	1.68	1.15	1.01
315	2053	18447		2.09	0.98	1.31	1.25	0.98
rl11849	6769	40885		2.09	1.02	7.09	0.82	0.88
d18512	10815	55880		1.99	1.00	7.87	1.04	1.04
cq9	1187	5786		1.52	1.03	4.54	1.14	1.03
qap10	1510	6381		1.49	0.86	5.31	1.34	1.01
de080285	368	1493		1.41	1.01	5.97	1.25	1.00
rail4284	2463	11802		1.37	1.02	13.22	1.29	1.09
pilot.we	554	2367		1.27	1.07	2.94	1.19	1.06
newman	334	2156		1.24	0.97	4.24	0.93	0.95
ge	1675	4758		1.14	1.03	2.63	1.03	1.03
rat1	452	2893		1.10	1.00	0.73	0.98	1.00
dano3mip.pre	1091	5239		1.08	1.04	10.64	1.42	0.95
342	10001	49999		0.98	1.05	1.59	0.86	0.93
t0331-4l	520	5034		0.91	1.00	2.50	1.46	1.09
132	216	812		0.89	0.89	1.17	1.66	1.08
model5	492	2247		0.88	0.99	2.15	1.09	1.03
dano3mip	1135	5390		0.85	1.26	13.15	1.65	1.12
grow22	434	4711		0.85	1.02	1.11	1.13	1.04
rl5915	3853	28829		0.82	1.06	9.93	1.32	1.22
model9	902	4361		0.75	1.09	1.89	1.06	1.09
siena1	1265	11573		0.67	1.03	27.21	3.06	1.50
fome11	6226	17749		0.64	1.00	13.28	1.37	1.17
model7	646	2850		0.64	1.03	2.14	1.08	1.08
rl5934	3773	23917		0.63	1.14	13.40	1.23	0.95
nesm	279	895		0.63	1.10	2.29	1.24	1.01
model4	409	1898		0.57	0.99	2.71	1.11	1.08
de063155	313	1233		0.54	1.05	7.73	1.08	1.05
lp22.pre	1811	13146		0.52	1.13	7.03	1.41	1.03
orna1	810	2842		0.51	1.01	1.02	0.80	1.00
lp22	1796	13076		0.49	1.16	7.18	1.43	1.29
scfxm1-2r-32	1447	5658		0.46	1.09	1.16	1.06	1.00
233	100	10000		0.44	1.00	0.88	0.89	0.89
van	7417	21681		0.44	1.09	42.86	1.05	1.06
usa13509	3595	19919		0.43	3.16	3.93	0.98	0.98
237	100	10000		0.40	1.06	1.06	1.14	1.02
arki001	160	893		0.37	1.00	2.16	1.09	1.02
230	200	40000		0.37	0.95	1.06	0.98	0.94

Matrix Name	n	nnz	tol 0 run time (s)	Relative Run Time				
				small	large	diag	tol 0.1	
greenbeb		713	3278	0.36	1.15	1.83	1.03	1.15
234		200	40000	0.35	1.00	1.06	0.95	0.97
280		430	1544	0.35	1.01	0.96	0.75	0.84
258		200	40000	0.35	0.99	0.99	1.01	0.93
grow15		297	3614	0.34	1.00	0.84	1.06	0.98
complex		327	10738	0.33	1.05	3.00	1.52	1.20
scfxm1-2r-27		1222	4753	0.33	1.02	1.24	0.96	1.03
newman3		369	3662	0.30	1.24	3.54	1.05	1.10
momentum1		932	2792	0.30	0.94	5.16	0.85	0.75
dfl001		3271	9276	0.27	1.22	13.44	1.89	1.14
dfl001.pre		2097	6501	0.27	1.08	8.80	1.20	0.88
stair		324	3431	0.27	0.94	1.85	1.64	1.02
stocfor3		1782	4562	0.26	1.35	2.27	1.32	1.19
large000		823	2282	0.25	1.05	1.03	1.02	1.04
ulevimin		697	1879	0.24	1.11	3.35	0.97	0.91
t1717		549	3657	0.24	1.06	4.23	1.90	1.45
de063157		282	1102	0.24	1.33	6.22	0.75	1.27
car4		122	4384	0.22	1.03	3.15	1.26	0.86
greenbea		664	2706	0.21	0.99	1.46	0.98	1.18
pcb3000		3058	27446	0.21	1.22	6.63	1.54	1.68
25fv47		416	2061	0.21	0.86	1.05	0.96	0.94
277		183	1069	0.20	1.20	9.67	8.55	1.50
stp3d		10642	25936	0.20	2.85	7.97	1.09	0.88
trento1		1070	10010	0.19	1.30	12.97	1.68	1.63
cq5		570	2615	0.19	1.19	2.60	1.27	1.18
dc1l		851	5171	0.18	1.17	7.53	1.70	1.13
gran		284	1958	0.17	0.98	0.93	0.98	1.00
dg012142		892	3627	0.15	1.12	1.57	1.03	1.02
nug08		732	3004	0.15	1.00	4.48	1.43	1.19
watson_2		1011	2703	0.15	0.84	1.40	0.71	1.06
dc1c		808	4698	0.14	1.12	8.40	1.79	1.25
scfxm1-2r-16		752	2962	0.13	1.20	1.20	0.92	1.25
air04		630	4187	0.12	0.79	2.80	1.68	1.27
aa01		630	4187	0.12	0.76	3.38	1.41	1.48
nemsemm2		789	2440	0.12	1.34	5.26	1.53	1.45
scfxm1-2b-16		784	2975	0.12	1.08	0.98	1.06	0.99
pf2177		406	1772	0.12	1.23	2.51	1.11	1.29
dolom1		806	5681	0.11	1.29	4.28	1.25	0.99
model3		310	1417	0.10	1.00	2.08	1.15	0.82

Table 2: Comprehensive Results: Medium Instances

Matrix Name	n	nnz	tol 0 run time (s)	Relative Run Time				
				small	large	diag	tol 0.1	
ds	647	12193		0.0985	1.38	2.97	1.15	1.14
ch	393	1304		0.0921	1.05	1.95	0.59	0.73
nug07	450	1780		0.0892	0.96	1.94	0.69	0.88
229	100	10000		0.0851	0.83	0.70	0.96	0.56
cr42	304	608		0.0810	1.29	1.31	0.69	0.84
143	131	536		0.0805	1.03	0.88	0.93	1.26
delf000	593	1606		0.0723	1.55	1.11	0.53	1.03
257	100	10000		0.0699	0.69	0.76	0.93	1.01
air06	562	3420		0.0679	0.80	2.38	0.91	0.68
protfold	574	2562		0.0671	0.96	4.55	1.32	1.04
pldd000b	537	1448		0.0659	0.94	1.37	1.08	1.33
279	261	2319		0.0646	1.24	1.46	1.44	0.62
msc98-ip	2897	10006		0.0632	1.57	3.21	1.11	0.97
l9	241	1381		0.0618	1.32	2.14	0.87	1.20
model2	149	757		0.0616	1.06	1.35	1.10	0.53
pcb1000	1156	9955		0.0615	1.00	4.20	2.54	1.40
aa03	562	3420		0.0579	1.00	2.51	0.95	1.10
lpl1	2692	7211		0.0516	0.93	2.25	0.64	0.65
biella1	813	5726		0.0503	1.16	3.22	1.38	1.28
grow7	138	1744		0.0491	1.09	1.20	0.96	1.61
bg512142	560	2140		0.0471	1.06	1.52	0.77	0.81
139	131	536		0.0453	1.06	1.90	2.00	2.23
rosen10	989	6916		0.0423	1.48	0.82	1.75	0.92
stormg2-125.pre	1780	4138		0.0404	0.91	1.02	0.94	0.92
df2177	414	1825		0.0396	1.62	4.24	2.67	1.74
stormg2-125	1886	4372		0.0394	0.97	1.04	1.08	0.92
rosen2	431	4143		0.0363	1.16	1.02	0.82	0.44
degen3	744	5431		0.0352	1.46	4.44	0.88	1.34
10teams	177	885		0.0350	1.01	0.90	1.14	1.07
scsd8	247	655		0.0344	0.47	0.93	0.76	0.60
pds-80	9225	19432		0.0336	1.04	1.72	1.08	0.84
basllp	502	6651		0.0328	0.82	4.64	1.09	0.60
pilot4i	134	1220		0.0315	1.15	2.67	1.47	1.93
cycle	284	878		0.0299	1.14	0.54	0.68	1.02
pds-100	8377	17555		0.0297	1.09	2.22	0.67	0.77
scfxm1-2r-8	403	1608		0.0294	1.08	1.56	1.19	1.68
air05	323	1789		0.0287	1.02	1.92	0.96	0.88
pds-60	7586	16067		0.0256	1.09	1.29	0.79	1.02
gosh	379	1379		0.0249	1.33	1.60	1.22	0.59
pds-90	7914	16673		0.0243	1.06	1.41	1.51	0.74
pds-70	7822	16545		0.0214	2.02	2.67	0.86	1.58
maros	289	1143		0.0213	1.09	1.27	1.31	0.54
ganges	344	1123		0.0201	0.99	0.61	0.79	0.51
fast0507	401	1908		0.0194	0.90	1.59	1.44	1.36

Matrix Name	n	nnz	tol 0 run time (s)	Relative Run Time				
				small	large	diag	tol 0.1	
bandm		122	609	0.0194	0.85	0.99	0.62	0.40
pds-50		5962	12592	0.0187	1.24	2.14	1.47	1.42
rail507		413	2005	0.0187	1.29	2.82	2.11	2.20
30_70_4.5_0.95_100		2754	8381	0.0183	0.95	1.15	1.15	1.25
baxter.pre		470	1274	0.0161	0.77	0.89	1.06	1.05
modszk1		263	765	0.0159	0.85	3.40	0.95	1.99
30_70_4.5_0.95_98		2451	7364	0.0154	1.18	1.31	1.12	1.17
30_70_4.5_0.5_100		2098	6197	0.0148	0.63	1.02	0.73	0.82
d6cube		223	1424	0.0147	2.61	8.60	3.46	2.95
rentacar		327	1080	0.0141	1.24	0.75	1.16	1.42
qiulp		603	1717	0.0138	1.97	2.90	1.24	1.83
nug06		267	1007	0.0135	0.60	2.70	0.57	1.49
qiu		603	1717	0.0133	1.89	3.43	1.24	1.78
scfxm1-2c-4		233	965	0.0123	1.36	1.48	1.11	1.17
rosen1		217	2528	0.0115	0.95	1.26	0.59	0.56
pds-40		4028	8478	0.0110	1.52	0.68	1.49	1.49
bnl2		459	1488	0.0107	1.19	1.71	0.87	1.33
mitre		801	2466	0.0107	1.82	2.91	2.27	1.12
pds-30		2643	5641	0.0107	0.96	1.24	1.08	0.87
rail516		268	936	0.0098	0.96	1.91	0.99	0.74
fome21		3291	7240	0.0098	1.25	2.72	2.10	1.87
south31		112	460	0.0095	1.63	1.56	2.24	1.59
rail582		384	1387	0.0093	0.95	1.82	1.39	1.59
seymour		537	1881	0.0092	1.30	2.15	0.98	0.77
scfxm1-2b-4		233	965	0.0084	1.38	1.73	1.18	0.95
sp97ar		271	2400	0.0082	0.97	1.14	0.67	1.21
neos6		174	1580	0.0082	0.95	2.29	0.75	0.93
neos		2342	5098	0.0077	0.44	0.98	0.69	0.72
r05		919	2717	0.0075	1.86	2.94	17.61	2.68
manna81		1392	2784	0.0073	0.51	0.27	0.42	0.36
p05		919	2717	0.0067	2.14	2.09	19.68	2.61
scfxm1-2r-4		233	965	0.0065	1.21	1.07	1.62	2.07
bnl1		223	824	0.0065	0.83	1.37	1.01	1.18
rosen8		264	1850	0.0057	0.96	0.78	2.79	1.05
scagr7-2r-864		680	1697	0.0057	1.44	1.35	1.09	1.73
sp98ar		223	1782	0.0055	0.87	1.55	1.41	0.47
fome20		1718	3811	0.0055	1.35	4.06	1.46	1.29
scrs8-2r-512		992	1984	0.0054	0.43	0.76	0.68	0.90
disctom		192	565	0.0052	0.79	2.07	1.75	1.66
scfxm3		262	1005	0.0052	0.80	2.42	0.96	1.47
danoint		196	790	0.0051	2.31	2.60	1.64	2.22
mzzv11		1098	3189	0.0047	1.78	1.71	1.92	0.99
80bau3b		154	396	0.0046	0.82	0.63	0.76	0.73
dbir2.pre		281	1879	0.0043	1.10	0.93	1.14	1.70

Matrix Name	n	nnz	tol 0 run time (s)	Relative Run Time				
				small	large	diag	tol 0.1	
capri		138	507	0.0043	2.31	5.90	2.71	2.01
p010		839	2486	0.0041	1.46	4.40	1.50	1.95
degen2		217	1138	0.0040	1.68	0.96	0.99	0.79
scfxm2		178	658	0.0037	1.22	1.08	1.17	1.11
baxter		256	697	0.0037	0.83	0.80	0.89	0.57
dbir1		154	845	0.0035	1.52	0.87	2.61	1.92
small000		140	383	0.0034	1.44	0.73	1.11	1.46
stormg2-27		449	1019	0.0034	1.07	0.71	0.55	0.58
roll3000		177	1101	0.0034	1.27	2.48	1.22	1.01
woodw		168	589	0.0032	1.52	4.88	1.17	1.68
route		339	1290	0.0032	1.21	5.23	1.32	0.97
nsct1		120	595	0.0031	0.88	1.37	1.40	1.56
neos.pre		2080	4578	0.0029	1.12	1.34	1.59	2.06
mzzv42z		787	2124	0.0027	1.33	1.81	1.78	2.01
crew1		127	861	0.0027	1.48	3.04	0.74	1.46
neos7		590	1434	0.0026	2.13	2.94	2.51	0.96
sgpf5y6		787	1870	0.0022	1.11	1.58	1.46	1.01
neos1		309	944	0.0022	2.16	2.84	1.24	1.85
neos11		365	1116	0.0022	3.00	3.12	1.68	2.90
nsct2.pre		156	1140	0.0021	1.13	0.74	1.86	0.81
stocfor2		224	576	0.0021	2.28	5.07	2.93	2.33
scrs8-2r-256		416	832	0.0020	1.12	0.38	0.62	1.47
neos4		454	944	0.0020	0.72	0.91	1.04	0.43
blp-ar98		148	876	0.0019	1.04	1.79	1.21	0.68
dsbmip		220	568	0.0019	1.93	1.52	1.35	1.41
sgpf5y6.pre		755	1744	0.0018	1.39	0.78	1.69	1.63
neos823206		220	547	0.0015	0.57	1.58	1.04	0.95
sc205		184	487	0.0015	0.65	0.78	0.83	0.82
rosen7		127	649	0.0014	0.91	1.39	0.84	0.87
scrs8-2r-64		256	512	0.0014	0.79	0.98	0.80	1.43
pp08aCUTS		131	332	0.0013	0.62	0.61	0.81	0.64
scorpion		131	507	0.0013	0.69	1.54	1.06	1.17
lpl3		212	461	0.0013	0.53	0.48	1.06	0.83
p19		117	555	0.0012	2.29	1.25	1.66	2.15
iiasa		113	262	0.0012	0.76	0.95	0.90	1.53
pds-20.pre		370	851	0.0012	1.71	1.42	1.33	0.76
rd-rplusc-21		148	454	0.0011	1.55	1.47	1.27	1.64
neos19		228	487	0.0011	1.33	1.17	0.82	1.55
gesa2_o		102	214	0.0011	0.97	0.41	0.77	0.53
boeing1		122	415	0.0011	1.57	1.69	0.92	0.94
gesa3_o		148	365	0.0010	1.22	0.77	1.09	0.61
gesa3		134	336	0.0010	1.18	0.62	1.19	0.94
UMTS		268	828	0.0010	1.37	26.97	1.28	1.51
scrs8		109	280	0.0010	0.60	1.02	1.15	1.65

				Relative Run Time				
Matrix Name	n	nnz	tol 0 run time (s)	small	large	diag	tol 0.1	
scrs8-2r-128		192	384	0.0010	1.27	1.26	0.74	1.13
scrs8-2c-64		168	336	0.0009	0.45	1.07	0.67	1.39
ceria3d		130	647	0.0009	1.52	1.88	0.98	1.11
stormg2-8		117	263	0.0009	0.68	1.13	0.64	1.15
nsct2		107	544	0.0009	1.13	1.12	1.87	1.66
mkc		106	250	0.0009	0.96	0.48	0.97	0.44
scrs8-2r-32		128	256	0.0009	1.19	0.80	0.79	0.91
dbir2		157	784	0.0009	1.58	3.07	1.81	2.19
neos818918		265	678	0.0009	1.71	2.65	2.86	0.98
mkc1		106	250	0.0008	0.93	1.31	0.96	1.30
bienst1		102	253	0.0006	0.77	0.65	0.92	1.58
nug05		107	362	0.0006	1.19	2.43	2.42	3.04
dcmulti		120	303	0.0005	1.42	0.80	0.96	1.15

Table 3: Comprehensive Results: Small Instances