

Table 1: Comparison of symbolic analysis metrics obtained with different Scotch versions and ordering strategies in the PaStiX solver. The ordering strategies are denoted as follows: *direct* corresponds to the PaStiX direct strategy, *pastix* to the PaStiX personal strategy, *dftv7* to the default Scotch 7 strategy, and *dftv8* to the default Scotch 8 strategy. Fill-in and FLOPs correspond to the symbolic factorization estimates. *cbk* denotes the number of supernodes (column blocks), *offdb* the number of off-diagonal blocks, and *offdp* the number of non-empty off-diagonal block pairs. Metrics are reported after the *SymFact1*, *SymFact2*, and *Map/Sched* phases, together with the final symbolic structure. Ordering, re-ordering, and analysis times are given in seconds, as well as the predicted factorization time.

Name	Prec	Fact.	N NNZ	Ord.	Strat.	Fill-in	Flops	Sym Fact 1		Sym Fact 2		Map/Sched		Symbolic structure			Timing (s)			
								cbk	blok	cbk	blok	cbk	blok	cbk	offdb	offdp	Ord.	Reord.	Analyze	Pred. Fact.
3Dspectralwave	z	LDL ^h	0.7M 17.2M	scotch6	direct	80.70	37.74T	7712	448213	7712	104455	8131	124445	8131	124445	76549	38.81	5.33	48.03	57.35
				scotch6	pastix	80.70	37.74T	7712	448213	7712	104455	8131	124445	8131	124445	76549	37.27	11.21	52.31	57.35
				scotch7	direct	85.12	38.62T	7536	488231	7536	114265	8036	138098	8036	138098	83130	11.37	6.68	21.89	56.19
				scotch7	pastix	85.12	38.62T	7536	488231	7536	114265	8036	138098	8036	138098	83130	10.90	6.78	21.44	56.19
				scotch7	dftv7	82.57	36.44T	17213	1158529	17213	341879	17677	367468	17677	367468	199688	26.92	7.10	38.22	54.46
				scotch8	direct	83.77	40.18T	14643	828521	14643	230251	15100	253899	15100	253899	138224	13.87	8.68	26.62	60.60
				scotch8	pastix	83.90	40.19T	12688	725283	12688	194538	13145	217570	13145	217570	120044	14.37	14.63	33.80	60.67
				scotch8	dftv7	92.94	49.63T	16632	1016051	16632	278256	17127	306231	17127	306231	175829	29.00	8.81	41.93	70.50
				scotch8	dftv8	85.00	40.36T	16046	489744	16046	265182	16511	290752	16511	290752	165693	15.57	10.63	30.11	61.77
3Dspectralwave2	z	LDL ^h	0.3M 7.3M	scotch6	direct	57.28	6.48T	3497	180795	3497	42471	3675	48861	3675	48861	30904	14.02	1.91	17.47	14.57
				scotch6	pastix	57.28	6.48T	3497	180795	3497	42471	3675	48861	3675	48861	30904	14.32	2.22	18.12	14.57
				scotch7	direct	63.77	7.72T	3270	198200	3270	44921	3468	52332	3468	52332	31869	5.46	2.81	10.02	16.01
				scotch7	pastix	63.77	7.72T	3270	198200	3270	44921	3468	52332	3468	52332	31869	6.07	3.06	10.63	16.01
				scotch7	dftv7	60.40	6.79T	7520	460742	7520	136731	7710	144659	7710	144659	79697	13.46	2.98	18.13	13.92
				scotch8	direct	57.38	6.36T	6362	331469	6362	89057	6544	95985	6544	95985	54414	6.01	1.79	9.39	13.51
				scotch8	pastix	57.49	6.36T	5566	292680	5566	76132	5749	83017	5749	83017	47480	5.95	1.71	9.26	13.48
				scotch8	dftv7	62.59	7.26T	7159	404206	7159	110413	7366	119273	7366	119273	69257	13.48	2.71	17.86	14.91
				scotch8	dftv8	56.92	6.17T	7072	204556	7072	106032	7252	113659	7252	113659	68174	6.42	2.38	10.43	13.32
Bump_2911	d	LDL ^t	2.9M 65.3M	scotch6	direct	156.52	186.07T	86652	790422	86652	294008	88417	430183	88417	430183	327511	30.67	44.77	88.52	845.58
				scotch6	pastix	156.55	186.07T	84470	770902	84470	283313	86241	421370	86241	421370	320775	29.96	45.57	88.19	844.30
				scotch7	direct	159.88	196.86T	87103	809112	87103	299478	88867	436892	88867	436892	332018	12.06	43.02	67.49	881.18
				scotch7	pastix	159.92	196.86T	84944	789126	84944	288618	86713	426551	86713	426551	324494	14.01	74.61	101.14	878.14
				scotch7	dftv7	157.24	192.39T	136999	2465201	136999	1155798	138796	1316921	138796	1316921	961657	15.20	64.99	94.66	857.76
				scotch8	direct	154.99	193.73T	227023	2937705	227023	1653839	228818	1808983	228818	1808983	1308209	15.27	126.10	157.63	845.96
				scotch8	pastix	156.25	193.76T	116182	1582329	116182	693298	117968	839871	117968	839871	601925	15.01	50.74	80.19	838.68
				scotch8	dftv7	159.45	201.21T	138610	2355153	138610	1065957	140421	1228894	140421	1228894	896567	16.52	62.96	94.90	895.26
				scotch8	dftv8	157.50	196.18T	138654	1593502	138654	1055464	140438	1213705	140438	1213705	890188	14.98	46.91	75.90	865.06
Cube_Coup_dt0	d	LDL ^t	2.2M 64.7M	scotch6	direct	108.24	89.05T	16726	451228	16726	157342	18341	246119	18341	246119	198165	14.84	9.29	37.29	402.88
				scotch6	pastix	108.26	89.05T	15600	442598	15600	152397	17218	241529	17218	241529	194326	15.53	27.38	55.54	404.94
				scotch7	direct	109.68	91.99T	16576	448125	16576	157327	18228	248189	18228	248189	200001	7.87	26.45	46.08	428.08
				scotch7	pastix	109.69	91.99T	15541	440461	15541	152948	17193	243957	17193	243957	196208	7.28	41.94	61.69	419.86
				scotch7	dftv7	107.88	91.22T	51729	1564562	51729	735502	53202	842388	53202	842388	643015	7.48	20.37	41.03	451.75
				scotch8	direct	106.02	91.53T	92400	1636984	92400	891645	93899	992015	93899	992015	736703	8.13	34.19	56.67	417.47
				scotch8	pastix	106.90	91.55T	41038	1083202	41038	480355	42538	577477	42538	577477	430736	7.60	17.08	38.65	424.75
				scotch8	dftv7	107.98	92.69T	55469	1605941	55469	737285	56962	842688	56962	842688	644559	7.97	22.56	43.84	418.02
				scotch8	dftv8	111.73	101.15T	55388	1086107	55388	730667	56882	840146	56882	840146	643212	8.09	31.99	52.73	459.63

Name	Prec	Fact.	N NNZ	Ord.	Strat.	Fill-in	Flops	Sym Fact 1		Sym Fact 2		Map/Sched		Symbolic structure			Timing (s)			
								cblk	blok	cblk	blok	cblk	blok	cblk	offdb	offdp	Ord.	Reord.	Analyze	Pred. Fact.
CurlCurl_3	d	LDL ^t	1.2M 7.4M	scotch6	direct	112.89	3.43T	36706	1161238	36706	396313	37005	408078	37005	408078	243556	30.37	4.75	37.01	26.47
				scotch6	pastix	113.21	3.43T	33788	1112103	33788	375136	34086	386947	34086	386947	227971	30.20	4.86	36.99	26.59
				scotch7	direct	106.71	2.82T	36486	1134148	36486	389829	36791	401212	36791	401212	241783	9.37	3.03	14.31	19.55
				scotch7	pastix	107.02	2.82T	33569	1086544	33569	369396	33871	380786	33871	380786	226110	9.29	3.25	14.40	19.54
				scotch7	dftv7	108.52	2.83T	48535	1701261	48535	616085	48834	627867	48834	627867	392245	10.51	3.77	16.49	19.42
				scotch8	direct	106.68	2.88T	47718	1447175	47718	535045	48007	546299	48007	546299	325416	12.22	2.96	17.37	20.01
				scotch8	pastix	107.47	2.88T	39642	1262911	39642	448366	39936	459916	39936	459916	270998	11.50	2.96	16.73	19.82
				scotch8	dftv7	108.20	2.91T	47181	1556793	47181	559615	47477	571722	47477	571722	346789	13.40	3.55	19.21	19.86
				scotch8	dftv8	108.94	2.94T	47101	1313133	47101	548578	47395	560786	47395	560786	346679	9.16	3.79	15.16	20.63
CurlCurl_4	d	LDL ^t	2.4M 14.4M	scotch6	direct	144.39	14.03T	70868	2296068	70868	787799	71474	817783	71474	817783	487319	63.13	19.06	85.86	77.86
				scotch6	pastix	144.70	14.03T	65310	2203205	65310	748457	65913	778111	65913	778111	456595	61.03	12.16	76.79	78.02
				scotch7	direct	139.88	12.39T	70423	2278715	70423	776585	71043	806726	71043	806726	484193	18.98	10.76	33.55	70.22
				scotch7	pastix	140.18	12.39T	64919	2185788	64919	736919	65537	766780	65537	766780	453188	18.44	11.85	34.43	69.27
				scotch7	dftv7	133.34	10.25T	94402	3354740	94402	1233936	94994	1262896	94994	1262896	781133	21.02	11.25	36.82	58.82
				scotch8	direct	132.96	10.87T	93296	2870934	93296	1075462	93900	1104339	93900	1104339	654624	26.93	20.82	52.25	61.42
				scotch8	pastix	133.77	10.87T	77319	2502282	77319	900886	77926	929560	77926	929560	545463	25.62	10.27	39.96	61.70
				scotch8	dftv7	136.78	11.07T	91798	3124363	91798	1119497	92408	1149978	92408	1149978	695403	24.94	9.71	39.26	61.20
				scotch8	dftv8	134.68	10.78T	91537	2630643	91537	1097949	92152	1127525	92152	1127525	691150	19.59	11.27	35.14	60.70
Emilia_923	d	LDL ^t	0.9M 21.0M	scotch6	direct	86.44	12.42T	9866	261381	9866	96317	10378	120410	10378	120410	87286	8.01	4.07	15.99	70.90
				scotch6	pastix	86.52	12.42T	8785	251273	8785	90846	9295	114876	9295	114876	83192	8.18	5.55	17.94	71.00
				scotch7	direct	89.72	13.69T	9836	262069	9836	97190	10357	122770	10357	122770	89137	3.94	6.79	14.86	74.02
				scotch7	pastix	89.78	13.69T	8775	252492	8775	92247	9296	117815	9296	117815	85293	4.18	6.53	14.80	75.31
				scotch7	dftv7	85.28	12.28T	25674	783103	25674	365273	26201	395277	26201	395277	285649	4.34	5.96	14.78	68.09
				scotch8	direct	85.94	13.44T	54034	945591	54034	528332	54577	558393	54577	558393	399625	4.17	10.96	19.91	73.83
				scotch8	pastix	87.21	13.45T	18814	515164	18814	225540	19349	253530	19349	253530	176969	4.12	7.23	16.00	72.84
				scotch8	dftv7	83.89	11.94T	26570	778995	26570	352058	27096	381524	27096	381524	274676	4.39	7.39	16.28	67.14
				scotch8	dftv8	86.64	13.01T	26504	524344	26504	345936	27051	376581	27051	376581	274165	4.23	6.85	15.38	70.00
Fault_639	d	LDL ^t	0.6M 14.6M	scotch6	direct	82.04	7.48T	7252	181572	7252	69181	7606	85217	7606	85217	62285	5.71	3.48	12.05	47.02
				scotch6	pastix	82.10	7.48T	6309	173347	6309	64569	6657	80227	6657	80227	58267	5.59	3.43	11.75	45.08
				scotch7	direct	84.34	7.92T	7211	182768	7211	70321	7572	87101	7572	87101	62402	2.83	4.15	9.66	47.85
				scotch7	pastix	84.39	7.92T	6285	175048	6285	65899	6650	82934	6650	82934	59798	2.76	6.52	12.07	48.53
				scotch7	dftv7	81.93	7.57T	18091	536005	18091	254878	18446	274301	18446	274301	198235	3.25	4.52	10.97	46.22
				scotch8	direct	79.85	7.63T	38238	653475	38238	370891	38607	390350	38607	390350	278005	3.23	6.34	13.12	46.68
				scotch8	pastix	81.11	7.64T	13141	352055	13141	156225	13512	174677	13512	174677	121575	3.05	4.45	10.32	46.87
				scotch8	dftv7	82.63	7.81T	18496	531339	18496	243637	18868	264132	18868	264132	190316	3.66	6.41	13.40	46.58
				scotch8	dftv8	81.01	7.55T	18505	362348	18505	239666	18867	259158	18867	259158	187086	3.29	5.07	11.31	47.16
Flan_1565	d	LDL ^t	1.6M 59.5M	scotch6	direct	27.54	3.73T	15213	267132	15213	107732	15918	125604	15918	125604	98089	17.47	2.16	30.27	20.44
				scotch6	pastix	27.55	3.73T	13978	250934	13978	101842	14677	119236	14677	119236	92403	16.39	1.43	28.56	20.63
				scotch7	direct	27.96	3.88T	15274	270167	15274	108527	15977	126634	15977	126634	98472	7.47	1.62	19.93	21.72
				scotch7	pastix	27.97	3.88T	13996	253815	13996	102675	14700	120627	14700	120627	93208	7.36	1.37	20.01	21.64
				scotch7	dftv7	27.76	4.08T	39372	885236	39372	452274	40095	475899	40095	475899	356929	9.18	2.20	24.32	21.92
				scotch8	direct	25.78	3.75T	52103	814617	52103	466087	52825	486348	52825	486348	331299	8.41	2.06	22.77	21.25
				scotch8	pastix	26.40	3.77T	26500	484579	26500	234107	27223	253815	27223	253815	180865	8.43	1.97	21.69	21.32
				scotch8	dftv7	28.12	4.24T	37837	809369	37837	395235	38584	419294	38584	419294	312940	9.85	1.94	23.31	24.94
				scotch8	dftv8	27.81	4.08T	38040	544776	38040	399156	38767	422464	38767	422464	320246	8.23	1.96	21.17	22.02

Name	Prec	Fact.	N NNZ	Ord.	Strat.	Fill-in	Flops	Sym Fact 1		Sym Fact 2		Map/Sched		Symbolic structure			Timing (s)			
								cblk	blok	cblk	blok	cblk	blok	cblk	offdb	offdp	Ord.	Reord.	Analyze	Pred. Fact.
Geo_1438	d	LDL ^t	1.4M 32.3M	scotch6	direct	81.93	17.14T	17138	410463	17138	150620	17909	183815	17909	183815	136072	12.96	7.56	27.27	96.03
				scotch6	pastix	82.01	17.14T	14571	388551	14571	138303	15344	171376	15344	171376	126612	12.83	7.35	26.49	94.39
				scotch7	direct	83.66	18.12T	17103	412553	17103	151399	17888	185097	17888	185097	136744	5.44	6.77	18.20	96.05
				scotch7	pastix	83.74	18.12T	14607	391313	14607	139421	15388	172904	15388	172904	127809	6.29	7.92	20.21	97.31
				scotch7	dftv7	81.52	17.37T	40784	1188738	40784	550342	41566	591254	41566	591254	433937	6.79	15.19	28.89	92.39
				scotch8	direct	81.52	18.69T	85920	1441105	85920	799734	86709	838048	86709	838048	606082	6.13	16.16	30.09	101.66
				scotch8	pastix	82.77	18.70T	29895	779889	29895	334725	30688	372025	30688	372025	263331	6.04	6.96	20.50	99.94
				scotch8	dftv7	82.80	18.33T	41954	1174424	41954	524965	42753	565748	42753	565748	411370	6.64	13.11	27.53	96.35
				scotch8	dftv8	82.98	18.46T	41997	785018	41997	519106	42797	559818	42797	559818	412313	7.91	10.25	24.86	98.24
Hook_1498	d	LDL ^t	1.5M 31.2M	scotch6	direct	55.72	8.75T	43083	579628	43083	305875	43668	329443	43668	329443	223770	14.24	3.27	23.73	49.05
				scotch6	pastix	56.22	8.75T	23963	477188	23963	229519	24543	252901	24543	252901	165177	14.85	3.69	25.18	48.11
				scotch7	direct	56.82	8.99T	42996	582678	42996	305950	43587	329859	43587	329859	223269	5.65	3.88	16.12	50.85
				scotch7	pastix	57.33	8.99T	23918	480022	23918	229309	24500	252566	24500	252566	164839	6.27	2.90	15.52	50.67
				scotch7	dftv7	55.14	8.45T	53780	1319679	53780	718705	54375	747772	54375	747772	518569	5.94	4.83	17.59	50.16
				scotch8	direct	51.54	8.61T	198076	1885466	198076	1381775	198671	1409080	198671	1409080	992608	6.56	7.21	22.63	51.10
				scotch8	pastix	53.89	8.63T	40810	797731	40810	439009	41409	464644	41409	464644	295167	6.37	8.50	21.84	51.24
				scotch8	dftv7	53.54	8.13T	53316	1127324	53316	616533	53892	643525	53892	643525	426605	6.41	4.00	16.94	48.64
				scotch8	dftv8	54.41	8.59T	53145	862189	53145	603995	53747	632477	53747	632477	424189	6.22	5.56	18.17	50.24
Long_Coup_dt0	d	LDL ^t	1.5M 44.3M	scotch6	direct	100.44	51.95T	12078	320287	12078	120477	13118	179795	13118	179795	141080	10.13	10.59	29.15	239.59
				scotch6	pastix	100.45	51.95T	11468	316074	11468	117889	12504	176933	12504	176933	138988	10.42	11.52	30.46	240.57
				scotch7	direct	104.59	57.16T	12051	320198	12051	120768	13104	182203	13104	182203	143587	5.52	19.17	33.04	275.30
				scotch7	pastix	104.61	57.16T	11418	315566	11418	117718	12476	179197	12476	179197	140317	5.61	15.97	29.86	272.82
				scotch7	dftv7	96.32	47.57T	36599	1074115	36599	523304	37569	592808	37569	592808	447881	6.22	20.01	36.73	225.90
				scotch8	direct	95.50	48.94T	65741	1145429	65741	649704	66715	716378	66715	716378	527592	5.98	13.32	28.96	245.49
				scotch8	pastix	96.38	48.96T	28684	750494	28684	348560	29657	413355	29657	413355	303808	5.63	13.17	27.89	234.58
				scotch8	dftv7	101.14	54.10T	38425	1088181	38425	520246	39397	592641	39397	592641	446928	5.95	22.41	37.38	259.25
				scotch8	dftv8	99.01	51.77T	38489	761200	38489	520145	39458	592101	39458	592101	448295	5.95	15.76	30.45	243.85
ML_Geer	d	LU	1.5M 110.9M	scotch6	direct	10.00	4.19T	16078	215435	16078	93270	16483	103542	16483	103542	80268	28.47	0.97	32.50	21.44
				scotch6	pastix	10.00	4.19T	15968	214531	15968	92863	16373	103135	16373	103135	79914	27.33	0.96	30.73	21.42
				scotch7	direct	10.03	4.41T	16179	210571	16179	89832	16577	100507	16577	100507	80151	10.63	0.98	14.06	24.20
				scotch7	pastix	10.03	4.41T	16052	209440	16052	89358	16450	100033	16450	100033	79723	9.51	1.00	12.98	24.20
				scotch7	dftv7	10.08	4.51T	37491	669893	37491	315434	37893	328029	37893	328029	269742	11.20	1.53	15.83	21.38
				scotch8	direct	9.63	4.51T	37366	511761	37366	225342	37779	237448	37779	237448	193163	10.49	1.36	15.90	23.17
				scotch8	pastix	9.71	4.52T	27954	378286	27954	165280	28362	176858	28362	176858	143481	10.79	1.22	15.40	23.52
				scotch8	dftv7	10.15	5.18T	36605	561703	36605	240328	37004	252802	37004	252802	214224	11.69	2.20	17.40	27.28
				scotch8	dftv8	10.21	5.21T	36733	336916	36733	236611	37144	249543	37144	249543	215950	9.89	1.60	14.25	27.51
PFlow_742	d	LDL ^t	0.7M 18.9M	scotch6	direct	29.21	1.34T	68425	261421	68425	96027	68640	102284	68640	102284	64939	34.37	1.05	39.14	10.61
				scotch6	pastix	29.28	1.34T	67897	251597	67897	92246	68113	98548	68113	98548	62750	35.06	1.10	40.33	10.69
				scotch7	direct	31.49	1.53T	69135	286869	69135	109961	69384	116984	69384	116984	71178	12.56	1.71	18.03	11.54
				scotch7	pastix	31.54	1.53T	68712	278809	68712	107184	68963	114296	68963	114296	69584	14.02	1.62	19.56	11.93
				scotch7	dftv7	31.42	1.56T	78394	599171	78394	238195	78648	246187	78648	246187	157460	18.72	1.46	24.08	11.87
				scotch8	direct	29.33	1.41T	75268	451296	75268	183075	75500	189963	75500	189963	110796	13.87	2.24	20.30	11.84
				scotch8	pastix	29.44	1.41T	73664	411621	73664	166372	73897	173194	73897	173194	101071	14.17	2.64	21.18	11.79
				scotch8	dftv7	29.19	1.35T	75669	495699	75669	193930	75896	200572	75896	200572	121267	17.20	2.09	23.19	11.84
				scotch8	dftv8	29.86	1.42T	75595	308416	75595	188757	75836	195981	75836	195981	122189	13.64	2.00	19.37	11.33

Name	Prec	Fact.	N NNZ	Ord.	Strat.	Fill-in	Flops	Sym Fact 1		Sym Fact 2		Map/Sched		Symbolic structure			Timing (s)			
								cblk	blok	cblk	blok	cblk	blok	cblk	offdb	offdp	Ord.	Reord.	Analyze	Pred. Fact.
RM07R	d	LU	0.4M 37.5M	scotch6	direct	27.52	17.35T	110264	51027	110264	19575	110594	34612	110594	34612	27058	3.94	3.92	9.53	82.74
				scotch6	pastix	27.52	17.35T	110264	51027	110264	19575	110594	34612	110594	34612	27058	3.57	4.31	9.61	82.74
				scotch7	direct	31.61	23.72T	110757	66973	110757	26455	111077	43298	111077	43298	32761	2.84	8.42	12.88	110.94
				scotch7	pastix	31.61	23.72T	110757	66973	110757	26455	111077	43298	111077	43298	32761	2.84	5.63	10.06	110.94
				scotch7	dftv7	26.77	16.83T	114790	216679	114790	110756	115088	129521	115088	129521	90572	3.52	5.60	10.85	77.14
				scotch8	direct	30.64	22.89T	114592	145867	114592	76607	114913	95417	114913	95417	64767	3.41	6.58	11.85	101.35
				scotch8	pastix	30.76	22.89T	112083	106750	112083	48301	112396	65858	112396	65858	46659	3.39	6.91	11.91	101.26
				scotch8	dftv7	26.03	16.05T	113019	126562	113019	59030	113318	75543	113318	75543	53575	3.80	4.83	10.34	84.43
				scotch8	dftv8	28.07	19.08T	113055	92390	113055	60476	113375	78656	113375	78656	57033	2.96	3.55	8.14	93.15
Serena	d	LDL ^t	1.4M 33.0M	scotch6	direct	89.31	29.05T	23987	473547	23987	200474	24681	241499	24681	241499	170667	13.15	11.90	31.50	151.36
				scotch6	pastix	89.50	29.05T	17259	425764	17259	170887	17956	212482	17956	212482	148717	14.24	10.63	32.67	156.84
				scotch7	direct	90.31	30.05T	24010	474287	24010	199443	24695	240168	24695	240168	169329	5.69	13.49	25.46	159.68
				scotch7	pastix	90.48	30.05T	17204	426646	17204	170049	17894	210996	17894	210996	148188	5.73	15.40	27.86	158.37
				scotch7	dftv7	86.85	27.87T	44339	1202866	44339	599219	45035	647130	45035	647130	452997	7.10	24.55	38.73	144.46
				scotch8	direct	88.35	30.83T	99967	1558882	99967	926258	100677	975543	100677	975543	677393	5.97	21.65	35.79	162.70
				scotch8	pastix	89.69	30.84T	30913	800835	30913	370358	31616	416495	31616	416495	277239	6.08	18.07	31.21	162.57
				scotch8	dftv7	87.62	27.98T	43439	1169736	43439	555583	44157	605701	44157	605701	419375	7.62	17.03	32.13	142.76
				scotch8	dftv8	88.64	28.96T	43435	835548	43435	546884	44132	595348	44132	595348	416609	5.68	16.16	28.70	147.88
StocF-1465	d	LDL ^t	1.5M 11.2M	scotch6	direct	101.62	3.62T	64846	1163521	64846	417478	65296	435858	65296	435858	255298	39.93	1.68	44.67	19.90
				scotch6	pastix	101.78	3.62T	62762	1127681	62762	404285	63209	422572	63209	422572	244661	40.29	3.39	46.55	19.84
				scotch7	direct	102.24	3.64T	65180	1183945	65180	424041	65638	442192	65638	442192	257761	11.13	1.65	15.78	20.92
				scotch7	pastix	102.39	3.64T	63139	1148810	63139	410925	63595	428893	63595	428893	247551	11.51	1.69	16.07	19.94
				scotch7	dftv7	105.11	3.86T	80982	1916375	80982	734360	81440	754778	81440	754778	456424	12.45	2.13	18.10	21.26
				scotch8	direct	100.83	3.67T	80736	1598871	80736	624773	81187	643431	81187	643431	378027	13.07	2.90	19.66	20.32
				scotch8	pastix	101.42	3.67T	72244	1397402	72244	528182	72694	546526	72694	546526	318007	12.56	1.96	17.72	20.20
				scotch8	dftv7	104.67	3.92T	79471	1710031	79471	637636	79932	657228	79932	657228	392835	13.82	2.53	19.72	22.39
				scotch8	dftv8	105.23	4.02T	79439	1019752	79439	627282	79906	647650	79906	647650	392758	14.04	2.42	19.65	23.09
Transport	d	LU	1.6M 23.5M	scotch6	direct	57.94	10.02T	37726	1169627	37726	413897	38234	432434	38234	432434	255257	48.86	2.72	53.01	43.84
				scotch6	pastix	58.01	10.03T	35655	1133811	35655	401329	36157	419440	36157	419440	245934	49.35	2.78	53.52	44.02
				scotch7	direct	57.42	9.71T	37567	1194241	37567	408016	38077	426656	38077	426656	252374	11.22	3.83	16.56	41.70
				scotch7	pastix	57.49	9.71T	35624	1162032	35624	396588	36134	415269	36134	415269	244053	10.13	2.28	13.81	41.42
				scotch7	dftv7	58.13	9.84T	57843	2112585	57843	776225	58347	796064	58347	796064	490929	11.87	2.81	16.99	40.39
				scotch8	direct	58.39	10.78T	55583	1675116	55583	630623	56090	649835	56090	649835	389840	20.11	5.89	27.81	54.44
				scotch8	pastix	58.72	10.78T	46244	1448569	46244	526488	46749	545319	46749	545319	323935	17.19	5.19	24.08	54.86
				scotch8	dftv7	57.29	9.71T	54535	1805698	54535	649925	55027	668952	55027	668952	406321	14.07	4.22	20.36	44.05
				scotch8	dftv8	59.76	11.17T	54744	1064575	54744	638028	55254	657395	55254	657395	404586	13.83	6.75	22.28	56.06
atmosmodd	d	LU	1.3M 8.8M	scotch6	direct	119.77	11.93T	63197	1569333	63197	659086	63525	676122	63525	676122	361787	50.28	7.95	59.63	55.45
				scotch6	pastix	119.99	11.93T	59784	1509838	59784	629761	60113	646937	60113	646937	341501	50.25	6.81	58.38	55.27
				scotch7	direct	117.73	11.44T	62593	1511222	62593	649360	62926	666009	62926	666009	358102	13.11	6.78	21.40	56.30
				scotch7	pastix	117.96	11.44T	59129	1450242	59129	618479	59459	634988	59459	634988	336768	12.81	6.76	20.90	56.74
				scotch7	dftv7	122.80	12.09T	64691	2096083	64691	873694	65037	892436	65037	892436	501714	21.07	8.98	31.84	57.14
				scotch8	direct	110.68	10.79T	77322	1688871	77322	799726	77638	815784	77638	815784	437278	12.90	8.34	22.92	53.08
				scotch8	pastix	111.45	10.79T	67703	1509899	67703	695785	68018	711625	68018	711625	377391	12.52	9.47	23.58	52.39
				scotch8	dftv7	116.98	11.27T	63055	1721578	63055	728339	63381	745083	63381	745083	408522	12.75	9.05	23.42	53.48
				scotch8	dftv8	118.69	11.58T	62120	2328742	62120	710256	62458	727568	62458	727568	401034	12.06	8.07	21.66	56.68

Name	Prec	Fact.	N NNZ	Ord.	Strat.	Fill-in	Flops	Sym Fact 1		Sym Fact 2		Map/Sched		Symbolic structure			Timing (s)			
								cblk	blok	cblk	blok	cblk	blok	cblk	offdb	offdp	Ord.	Reord.	Analyze	Pred. Fact.
atmosmodl	d	LU	1.5M 10.3M	scotch6	direct	103.18	9.54T	76149	1778672	76149	773108	76540	789262	76540	789262	423554	61.22	5.51	68.32	44.86
				scotch6	pastix	103.42	9.54T	71953	1704829	71953	735492	72344	751341	72344	751341	397295	61.94	6.44	69.94	44.88
				scotch7	direct	108.87	10.52T	75914	1810366	75914	764451	76320	781507	76320	781507	419844	25.26	5.65	32.54	45.43
				scotch7	pastix	109.11	10.52T	71743	1736141	71743	727391	72156	745091	72156	745091	396191	25.47	5.53	32.68	44.82
				scotch7	dftv7	112.00	10.71T	75889	2465765	75889	1013402	76305	1032635	76305	1032635	579403	12.50	6.83	21.43	47.24
				scotch8	direct	105.31	10.50T	91122	2013374	91122	928145	91513	946026	91513	946026	505887	18.57	5.99	26.45	46.55
				scotch8	pastix	106.06	10.50T	79920	1802066	79920	807497	80313	825016	80313	825016	438338	19.27	5.49	26.49	47.21
				scotch8	dftv7	108.53	10.69T	73046	2014721	73046	838031	73428	856014	73428	856014	469108	12.84	6.53	21.31	45.96
				scotch8	dftv8	110.14	10.90T	73674	2681325	73674	824419	74082	842983	74082	842983	464720	14.93	6.54	23.24	48.30
audikw_1	d	LDL ^t	0.9M 39.3M	scotch6	direct	32.11	4.82T	10952	262603	10952	107344	11408	123053	11408	123053	82476	13.41	1.81	23.00	27.52
				scotch6	pastix	32.14	4.82T	9879	252286	9879	101852	10340	117842	10340	117842	78949	13.42	1.81	22.87	27.15
				scotch7	direct	32.31	4.88T	10895	262882	10895	107351	11360	123836	11360	123836	83230	6.23	1.71	15.45	27.07
				scotch7	pastix	32.33	4.88T	9908	253876	9908	102486	10375	119186	10375	119186	79767	6.38	1.78	16.35	28.04
				scotch7	dftv7	31.88	5.10T	26268	766557	26268	374412	26741	395355	26741	395355	268480	7.75	3.16	19.56	31.81
				scotch8	direct	30.69	4.95T	49285	923740	49285	511925	49740	530394	49740	530394	340661	6.95	2.64	18.66	30.19
				scotch8	pastix	31.31	4.96T	19101	510373	19101	232757	19561	250508	19561	250508	159004	6.81	2.31	17.09	29.67
				scotch8	dftv7	31.51	4.84T	27213	783237	27213	363460	27684	384200	27684	384200	258644	8.41	4.73	21.21	27.53
				scotch8	dftv8	31.63	4.97T	27154	565265	27154	359116	27624	379841	27624	379841	255872	6.79	3.30	18.05	30.22
bone010	d	LDL ^t	1.0M 36.3M	scotch6	direct	34.43	4.29T	14765	207281	14765	92253	15227	106087	15227	106087	78587	11.50	1.61	19.86	29.17
				scotch6	pastix	34.53	4.29T	9848	183550	9848	77418	10315	91587	10315	91587	66445	10.67	2.11	20.08	28.64
				scotch7	direct	36.90	5.03T	14739	211978	14739	91757	15226	107082	15226	107082	80172	5.18	1.53	13.97	30.68
				scotch7	pastix	37.00	5.03T	9727	187270	9727	76360	10215	91521	10215	91521	67073	5.10	1.40	14.55	32.68
				scotch7	dftv7	35.73	4.90T	27780	651265	27780	332779	28278	352722	28278	352722	254954	5.59	2.68	15.13	30.02
				scotch8	direct	34.39	4.88T	47539	689192	47539	404358	48040	422390	48040	422390	287378	5.73	4.06	17.73	34.47
				scotch8	pastix	35.13	4.89T	18681	396876	18681	192717	19178	209901	19178	209901	139820	7.24	3.59	18.17	34.17
				scotch8	dftv7	35.17	4.75T	26486	611603	26486	300422	26978	319738	26978	319738	227077	6.17	2.57	16.31	30.55
				scotch8	dftv8	36.19	5.20T	26473	407078	26473	294671	26974	314364	26974	314364	226010	5.00	3.57	15.32	35.32
cage13	d	LU	0.4M 7.5M	scotch6	direct	506.56	200.49T	7580	747513	7580	211326	8045	285416	8045	285416	145482	12.96	26.99	40.83	585.20
				scotch6	pastix	506.61	200.49T	7147	742772	7147	209232	7613	283090	7613	283090	143219	12.55	27.50	41.01	584.90
				scotch7	direct	426.83	135.88T	7654	750147	7654	209681	8110	278267	8110	278267	139259	6.22	39.11	46.17	455.34
				scotch7	pastix	426.90	135.88T	7207	744736	7207	207276	7664	276426	7664	276426	137449	6.17	30.68	37.66	453.09
				scotch7	dftv7	335.36	89.62T	13626	1375399	13626	461351	14038	525349	14038	525349	232344	10.80	57.64	69.87	343.76
				scotch8	direct	736.66	373.45T	10989	1243314	10989	366663	11534	471568	11534	471568	234197	5.81	123.07	130.34	902.65
				scotch8	pastix	736.95	373.45T	9390	1145542	9390	323900	9938	426543	9938	426543	213270	6.03	89.31	96.72	893.68
				scotch8	dftv7	306.85	75.28T	11738	1028679	11738	321692	12139	375948	12139	375948	179428	11.67	39.78	52.59	293.70
dielFilterV2clx	z	LDL ^t	0.6M 13.0M	scotch6	direct	18.04	2.21T	23415	368956	23415	173971	23520	176691	23520	176691	116715	9.87	0.80	13.54	5.00
				scotch6	pastix	18.61	2.22T	13667	286922	13667	122395	13773	125065	13773	125065	80769	10.20	0.52	13.49	5.16
				scotch7	direct	18.12	2.21T	23335	369910	23335	174686	23444	177443	23444	177443	117049	4.26	0.58	7.55	5.03
				scotch7	pastix	18.70	2.22T	13633	288744	13633	123153	13739	125824	13739	125824	81049	4.19	0.56	7.55	5.18
				scotch7	dftv7	18.46	2.32T	21815	486050	21815	223583	21925	226616	21925	226616	152805	5.27	0.75	8.92	4.77
				scotch8	direct	17.28	2.23T	57022	884554	57022	489146	57127	492118	57127	492118	341504	4.84	0.80	9.00	4.95
				scotch8	pastix	18.34	2.25T	17676	389276	17676	176582	17782	179366	17782	179366	113187	5.13	0.56	8.67	4.98
				scotch8	dftv7	18.68	2.28T	21253	493288	21253	220336	21363	223491	21363	223491	146265	5.62	0.64	9.12	4.88
				scotch8	dftv8	18.79	2.36T	21277	298793	21277	213838	21387	216834	21387	216834	145316	4.79	0.65	8.20	5.34

Name	Prec	Fact.	N NNZ	Ord.	Strat.	Fill-in	Flops	Sym Fact 1		Sym Fact 2		Map/Sched		Symbolic structure			Timing (s)			
								cblk	blok	cblk	blok	cblk	blok	cblk	offdb	offdp	Ord.	Reord.	Analyze	Pred. Fact.
dielFilterV3clx	z	LDL ^t	0.4M 16.7M	scotch6	direct	10.46	1.35T	14709	151009	14709	89314	14785	90954	14785	90954	67843	3.31	0.54	7.20	2.75
				scotch6	pastix	10.62	1.35T	8571	112613	8571	59908	8646	61427	8646	61427	44989	3.27	0.41	7.20	2.76
				scotch7	direct	10.67	1.42T	14714	151493	14714	89051	14797	90740	14797	90740	68019	1.90	0.48	5.90	3.08
				scotch7	pastix	10.81	1.42T	8609	112842	8609	59894	8693	61642	8693	61642	45071	2.00	0.43	5.70	2.88
				scotch7	dftv7	10.32	1.41T	13054	198240	13054	111986	13135	113974	13135	113974	88277	2.18	0.46	5.97	2.87
				scotch8	direct	9.77	1.33T	29847	323744	29847	207521	29933	209801	29933	209801	163390	2.19	0.75	6.58	2.57
				scotch8	pastix	10.42	1.36T	10737	157290	10737	86881	10821	88856	10821	88856	63897	2.14	0.64	6.37	2.73
				scotch8	dftv7	10.63	1.42T	14124	232442	14124	129255	14203	131392	14203	131392	99648	2.49	0.57	6.41	2.67
				scotch8	dftv8	10.58	1.38T	14141	149338	14141	126426	14226	128854	14226	128854	99882	2.19	0.50	6.00	2.58
fem_hifreq_circuit	z	LU	0.5M 20.2M	scotch6	direct	9.59	1.56T	17638	282715	17638	130651	17741	132947	17741	132947	89385	8.02	0.44	9.14	3.99
				scotch6	pastix	9.86	1.57T	10727	227921	10727	95268	10832	97639	10832	97639	64360	7.89	0.39	9.01	3.83
				scotch7	direct	9.80	1.65T	17607	281382	17607	129848	17715	132325	17715	132325	88971	3.53	0.48	4.69	4.04
				scotch7	pastix	10.06	1.65T	10708	227037	10708	95279	10817	97769	10817	97769	64561	3.08	0.49	4.18	4.01
				scotch7	dftv7	9.73	1.59T	16838	388704	16838	174589	16944	177278	16944	177278	121692	3.93	0.52	5.21	3.77
				scotch8	direct	9.40	1.72T	47831	740451	47831	410536	47942	413412	47942	413412	292730	3.65	0.71	5.65	3.87
				scotch8	pastix	9.98	1.74T	13999	318242	13999	141846	14109	144499	14109	144499	93614	3.82	0.49	5.04	3.93
				scotch8	dftv7	10.16	1.73T	16838	410644	16838	180362	16944	182962	16944	182962	121901	4.52	0.59	5.96	4.03
				scotch8	dftv8	10.04	1.68T	16827	242356	16827	174970	16935	177704	16935	177704	121956	3.70	0.53	4.92	3.96
nlpkkt80	d	LDL ^t	1.1M 14.9M	scotch6	direct	150.48	23.57T	71924	1380173	71924	757065	72430	790811	72430	790811	360040	53.03	34.62	91.49	127.61
				scotch6	pastix	150.48	23.57T	71907	1379862	71907	756949	72413	790696	72413	790696	359942	53.63	31.42	88.82	127.61
				scotch7	direct	203.00	42.31T	97164	1721908	97164	1018641	97759	1064086	97759	1064086	473100	20.61	39.38	64.28	208.46
				scotch7	pastix	203.00	42.31T	97138	1721373	97138	1018433	97733	1063875	97733	1063875	472957	19.27	49.95	73.56	208.46
				scotch7	dftv7	205.47	42.05T	70585	2354977	70585	1097378	71181	1150444	71181	1150444	536787	23.44	40.23	68.19	205.31
				scotch8	direct	138.85	19.63T	78455	1778693	78455	1030446	78974	1063155	78974	1063155	453979	26.76	31.15	62.11	104.46
				scotch8	pastix	140.51	19.64T	68351	1515370	68351	821044	68872	853210	68872	853210	391168	22.61	25.77	52.44	104.66
				scotch8	dftv7	183.73	34.33T	58714	1581184	58714	807808	59300	851872	59300	851872	372484	31.55	36.43	72.15	172.11
				scotch8	dftv8	183.73	34.44T	56684	4386365	56684	791683	57265	838570	57265	838570	360961	22.94	43.45	70.58	172.48
sparsine	d	LDL ^t	0.1M 0.8M	scotch6	direct	268.21	1.39T	417	106682	417	25717	496	29642	496	29642	10191	2.16	3.56	5.98	15.38
				scotch6	pastix	268.21	1.39T	417	106682	417	25717	496	29642	496	29642	10191	2.81	4.47	7.54	15.38
				scotch7	direct	262.97	1.32T	387	100958	387	23717	464	27159	464	27159	9047	2.13	2.93	5.32	14.23
				scotch7	pastix	262.97	1.32T	387	100958	387	23717	464	27159	464	27159	9047	2.20	2.95	5.39	14.23
				scotch7	dftv7	236.10	1.09T	1163	330725	1163	83509	1239	88599	1239	88599	27429	4.63	8.42	13.43	12.06
				scotch8	direct	261.34	1.31T	805	165435	805	51084	890	56685	890	56685	17918	1.92	4.02	6.26	13.58
				scotch8	pastix	261.72	1.31T	694	153794	694	46085	777	51504	777	51504	15964	1.95	4.02	6.27	13.76
				scotch8	dftv7	240.25	1.11T	890	216618	890	52264	968	56570	968	56570	18649	4.23	7.04	11.60	12.12