Weighted by Observations - Optimal, Noisy

#	$\|\mathcal{G}\|$	% Obs	$\|O\|$	G^*	No weight (original)						No weight-U (original)						No weight-U-Max (original)						Weighted						Weighted-U					
					Time	AR	FPR	FNR	Acc	$\|S\|$	Time	AR	FPR	FNR	Acc	$\|S\|$	Time	AR	FPR	FNR	Acc	$\|S\|$	Time	AR	FPR	FNR	Acc	$\|S\|$	Time	AR	FPR	FNR	Acc	$\|S\|$
BLOCKS (108)	20.3	10	2.25	8.0	4.117	0.32	0.26	0.41	66.7	6.67	4.117	0.33	0.33	0.34	69.4	9.11	4.123	0.33	0.33	0.34	69.4	9.14	-	-	-	-	-	-	-	-	-	-	-	-
		30	4.08	3.97	4.122	0.37	0.27	0.37	75.0	3.44	4.122	0.39	0.44	0.17	88.9	7.64	4.123	0.39	0.45	0.16	88.9	8.14	-	-	-	-	-	-	-	-	-	-	-	-
		50	5.67	2.5	4.123	0.64	0.14	0.21	83.3	2.17	4.125	0.52	0.38	0.09	94.4	4.53	4.121	0.46	0.45	0.09	94.4	5.81	-	-	-	-	-	-	-	-	-	-	-	-
		70	8.42	1.94	4.133	0.79	0.06	0.15	91.7	1.67	4.135	0.58	0.31	0.11	94.4	2.86	4.13	0.56	0.34	0.1	94.4	3.75	-	-	-	-	-	-	-	-	-	-	-	-
		100	11.08	1.83	4.133	0.88	0.0	0.12	94.4	1.58	4.137	0.8	0.14	0.06	97.2	2.08	4.137	0.76	0.18	0.06	97.2	2.44	-	-	-	-	-	-	-	-	-	-	-	-
IPC-GRID (144)	7.5	10	2.63	2.71	1.675	0.57	0.09	0.34	91.7	1.5	1.675	0.61	0.1	0.29	95.8	1.67	1.675	0.61	0.1	0.29	95.8	1.67	-	-	-	-	-	-	-	-	-	-	-	-
		30	5.19	1.21	1.675	0.85	0.06	0.08	91.7	1.17	1.676	0.83	0.09	0.07	93.8	1.25	1.679	0.83	0.09	0.07	93.8	1.25	-	-	-	-	-	-	-	-	-	-	-	-
		50	7.81	1.13	1.679	0.89	0.06	0.05	95.8	1.15	1.679	0.88	0.07	0.05	95.8	1.17	1.677	0.88	0.07	0.05	95.8	1.72	-	-	-	-	-	-	-	-	-	-	-	-
		70	10.75	1.04	1.681	0.95	0.04	0.01	100.0	1.15	1.682	0.95	0.04	0.01	100.0	1.15	1.68	0.95	0.04	0.01	100.0	1.15	-	-	-	-	-	-	-	-	-	-	-	-
		100	14.63	1.0	1.688	1.0	0.0	0.0	100.0	1.0	1.689	1.0	0.0	0.0	100.0	1.0	1.691	1.0	0.0	0.0	100.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-
LOGISTICS (108)	10.0	10	3.0	2.83	1.899	0.58	0.19	0.23	94.4	2.72	1.898	0.58	0.19	0.23	94.4	2.78	1.896	0.58	0.19	0.23	94.4	2.78	-	-	-	-	-	-	-	-	-	-	-	-
		30	7.58	1.19	1.902	0.82	0.11	0.07	94.4	1.28	1.902	0.84	0.15	0.01	100.0	1.67	1.901	0.84	0.15	0.01	100.0	1.67	-	-	-	-	-	-	-	-	-	-	-	-
		50	11.42	1.06	1.904	0.9	0.06	0.04	97.2	1.11	1.9	0.88	0.1	0.03	100.0	1.28	1.898	0.9	0.1	0.03	100.0	1.28	-	-	-	-	-	-	-	-	-	-	-	-
		70	16.08	1.03	1.902	0.97	0.01	0.01	100.0	1.03	1.907	0.94	0.04	0.01	100.0	1.08	1.903	0.94	0.04	0.01	100.0	1.08	-	-	-	-	-	-	-	-	-	-	-	-
		100	22.0	1.0	1.905	1.0	0.0	0.0	100.0	1.0	1.903	1.0	0.0	0.0	100.0	1.0	1.905	1.0	0.0	0.0	100.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-
MICONIC (108)	6.0	10	3.0	2.53	1.197	0.39	0.29	0.32	69.4	2.39	1.197	0.37	0.37	0.26	72.2	3.08	1.195	0.37	0.37	0.26	72.2	3.08	-	-	-	-	-	-	-	-	-	-	-	-
		30	6.83	1.22	1.197	0.57	0.26	0.17	80.6	1.44	1.197	0.43	0.42	0.14	83.3	2.22	1.197	0.43	0.42	0.14	83.3	2.22	-	-	-	-	-	-	-	-	-	-	-	-
		50	10.42	1.06	1.196	0.93	0.06	0.01	100.0	1.14	1.196	0.76	0.24	0.01	100.0	1.67	1.198	0.75	0.24	0.01	100.0	1.72	-	-	-	-	-	-	-	-	-	-	-	-
		70	14.83	1.0	1.196	0.94	0.05	0.01	97.2	1.08	1.198	0.78	0.22	0.0	100.0	1.53	1.198	0.78	0.22	0.0	100.0	1.53	-	-	-	-	-	-	-	-	-	-	-	-
		100	20.0	1.0	1.2	0.94	0.04	0.01	97.2	1.06	1.2	0.93	0.06	0.01	97.2	1.11	1.198	0.92	0.07	0.01	97.2	1.19	-	-	-	-	-	-	-	-	-	-	-	-
ROVERS (108)	6.0	10	2.67	2.28	1.277	0.44	0.31	0.26	80.6	2.58	1.276	0.44	0.33	0.22	86.1	2.78	1.276	0.44	0.33	0.22	86.1	2.78	-	-	-	-	-	-	-	-	-	-	-	-
		30	4.67	1.31	1.277	0.7	0.16	0.14	83.3	1.36	1.278	0.68	0.21	0.11	91.7	1.69	1.275	0.68	0.21	0.11	91.7	1.69	-	-	-	-	-	-	-	-	-	-	-	-
		50	7.42	1.19	1.276	0.8	0.12	0.09	91.7	1.33	1.278	0.79	0.14	0.07	94.4	1.47	1.274	0.79	0.14	0.07	94.4	1.47	-	-	-	-	-	-	-	-	-	-	-	-
		70	10.17	1.0	1.277	0.93	0.06	0.01	97.2	1.08	1.278	0.89	0.1	0.01	97.2	1.17	1.275	0.88	0.1	0.01	97.2	1.19	-	-	-	-	-	-	-	-	-	-	-	-
		100	13.5	1.0	1.279	0.97	0.03	0.0	100.0	1.06	1.277	0.97	0.03	0.0	100.0	1.06	1.28	0.97	0.03	0.0	100.0	1.06	-	-	-	-	-	-	-	-	-	-	-	-
SATELLITE (108)	6.0	10	2.42	3.53	1.092	0.53	0.22	0.25	75.0	3.31	1.09	0.51	0.26	0.23	77.8	3.64	1.09	0.51	0.26	0.23	77.8	3.64	-	-	-	-	-	-	-	-	-	-	-	-
		30	4.42	2.39	1.091	0.5	0.24	0.27	77.8	2.33	1.092	0.54	0.29	0.17	83.3	3.08	1.093	0.57	0.33	0.1	91.7	2.56	-	-	-	-	-	-	-	-	-	-	-	-
		50	7.17	1.58	1.093	0.67	0.19	0.14	88.9	1.89	1.094	0.57	0.33	0.1	91.7	2.53	1.093	0.57	0.33	0.1	91.7	2.56	-	-	-	-	-	-	-	-	-	-	-	-
		70	10.08	1.31	1.093	0.87	0.06	0.07	94.4	1.31	1.093	0.71	0.25	0.04	94.4	2.17	1.092	0.71	0.25	0.04	94.4	2.17	-	-	-	-	-	-	-	-	-	-	-	-
		100	13.17	1.25	1.095	0.92	0.05	0.03	97.2	1.31	1.092	0.88	0.09	0.03	97.2	1.39	1.093	0.86	0.11	0.03	97.2	1.47	-	-	-	-	-	-	-	-	-	-	-	-
SOKOBAN (108)	8.7	10	3.33	2.11	3.235	0.27	0.36	0.37	58.3	2.78	3.235	0.29	0.48	0.23	83.3	4.36	3.237	0.29	0.48	0.23	83.3	4.36	-	-	-	-	-	-	-	-	-	-	-	-
		30	8.17	1.25	3.192	0.56	0.29	0.15	77.8	2.17	3.193	0.41	0.54	0.05	97.2	4.42	3.192	0.41	0.54	0.05	97.2	4.44	-	-	-	-	-	-	-	-	-	-	-	-
		50	12.67	1.22	3.178	0.61	0.3	0.09	94.4	2.97	3.175	0.47	0.5	0.03	97.2	4.11	3.173	0.47	0.5	0.03	97.2	4.14	-	-	-	-	-	-	-	-	-	-	-	-
		70	18.0	1.03	3.167	0.6	0.36	0.04	94.4	3.75	3.17	0.5	0.48	0.02	94.4	4.42	3.167	0.5	0.48	0.02	94.4	4.42	-	-	-	-	-	-	-	-	-	-	-	-
		100	24.67	1.0	3.161	0.66	0.34	0.0	100.0	3.89	3.162	0.55	0.45	0.0	100.0	4.28	3.159	0.55	0.45	0.0	100.0	4.28	-	-	-	-	-	-	-	-	-	-	-	-
Average					2.066	0.72	0.15	0.13	89.48	1.97	2.066	0.67	0.23	0.09	93.23	2.64	2.066	0.67	0.24	0.09	93.23	2.74	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 1: Results for weighted observation sequences, with optimal observations. Each observation ω_i receives weight i.

Weighted by Observations - Suboptimal, Noisy

#	$\|\mathcal{G}\|$	% Obs	$\|O\|$	G^*	No weight (original)						No weight-U (original)						No weight-U-Max (original)						Weighted						Weighted-U					
					Time	AR	FPR	FNR	Acc	$\|S\|$	Time	AR	FPR	FNR	Acc	$\|S\|$	Time	AR	FPR	FNR	Acc	$\|S\|$	Time	AR	FPR	FNR	Acc	$\|S\|$	Time	AR	FPR	FNR	Acc	$\|S\|$
BLOCKS (144)	20.3	10	2.42	7.61	4.855	0.38	0.26	0.36	69.4	6.58	4.86	0.42	0.43	0.15	88.9	12.72	4.856	0.42	0.44	0.15	88.9	12.89	13.176	0.08	0.2	0.72	30.6	2.08	-	-	-	-	-	-
		30	4.92	3.58	4.863	0.36	0.28	0.37	63.9	3.47	4.864	0.34	0.55	0.1	91.7	11.33	4.856	0.33	0.57	0.1	91.7	11.72	9.345	0.15	0.3	0.55	50.0	1.75	-	-	-	-	-	-
		50	7.33	3.19	4.861	0.53	0.19	0.29	83.3	2.64	4.86	0.33	0.54	0.13	97.2	7.64	4.863	0.31	0.57	0.12	97.2	8.67	8.597	0.27	0.21	0.51	61.1	1.42	-	-	-	-	-	-
		70	10.67	2.53	4.869	0.67	0.13	0.2	88.9	2.22	4.866	0.45	0.45	0.1	100.0	5.56	4.863	0.45	0.48	0.09	100.0	6.08	8.527	0.39	0.19	0.41	80.6	1.47	-	-	-	-	-	-
		100	14.42	2.25	4.87	0.78	0.0	0.22	91.7	1.53	4.871	0.7	0.15	0.15	97.2	2.17	4.867	0.64	0.21	0.15	97.2	2.72	7.054	0.67	0.01	0.33	100.0	1.06	-	-	-	-	-	-
IPC-GRID (144)	7.5	10	3.06	1.58	1.995	0.62	0.22	0.15	89.6	2.1	1.999	0.53	0.34	0.13	93.8	2.96	1.999	0.53	0.34	0.13	93.8	2.96	-	-	-	-	-	-	-	-	-	-	-	-
		30	7.13	1.4	2.0	0.68	0.17	0.14	89.6	1.44	1.999	0.55	0.34	0.1	93.8	2.08	1.999	0.55	0.34	0.1	93.8	2.08	-	-	-	-	-	-	-	-	-	-	-	-
		50	10.94	1.35	2.002	0.84	0.05	0.11	95.8	1.06	2.002	0.79	0.13	0.08	97.9	1.48	2.002	0.79	0.13	0.08	97.9	1.48	-	-	-	-	-	-	-	-	-	-	-	-
		70	15.56	1.31	2.006	0.89	0.03	0.08	100.0	1.06	2.005	0.87	0.06	0.07	100.0	1.15	2.005	0.87	0.06	0.07	100.0	1.15	-	-	-	-	-	-	-	-	-	-	-	-
		100	21.13	1.5	2.011	0.94	0.0	0.06	100.0	1.0	2.012	0.94	0.0	0.06	100.0	1.0	2.014	0.94	0.0	0.06	100.0	1.0	-	-	-	-	-	-	-	-	-	-	-	-
LOGISTICS (144)	10.0	10	3.67	2.0	2.232	0.55	0.23	0.22	88.9	2.36	2.232	0.51	0.27	0.22	88.9	2.94	2.229	0.51	0.27	0.22	88.9	2.94	6.228	0.44	0.2	0.36	66.7	1.67	-	-	-	-	-	-
		30	9.33	1.14	2.234	0.8	0.14	0.06	100.0	1.33	2.237	0.7	0.26	0.04	100.0	1.94	2.233	0.7	0.26	0.04	100.0	1.94	6.218	0.8	0.12	0.08	91.7	1.22	-	-	-	-	-	-
		50	14.58	1.06	2.236	0.91	0.08	0.01	100.0	1.22	2.239	0.7	0.29	0.01	100.0	2.08	2.236	0.7	0.29	0.01	100.0	2.17	6.232	0.89	0.06	0.04	94.4	1.14	-	-	-	-	-	-
		70	20.17	1.03	2.239	0.96	0.03	0.01	100.0	1.06	2.24	0.84	0.15	0.01	100.0	1.36	2.237	0.84	0.15	0.01	100.0	1.36	6.2	0.9	0.07	0.03	97.2	1.11	-	-	-	-	-	-
		100	28.17	1.0	2.244	1.0	0.0	0.0	100.0	1.0	2.241	1.0	0.0	0.0	100.0	1.0	2.24	1.0	0.0	0.0	100.0	1.0	6.264	1.0	0.0	0.0	100.0	1.0	-	-	-	-	-	-
MICONIC (144)	6.0	10	3.0	1.83	1.419	0.43	0.32	0.25	80.6	2.11	1.421	0.41	0.39	0.2	83.3	2.89	1.419	0.41	0.39	0.2	83.3	2.89	3.936	0.42	0.27	0.32	63.9	1.72	-	-	-	-	-	-
		30	9.67	1.25	1.421	0.75	0.16	0.1	88.9	1.36	1.418	0.36	0.61	0.03	100.0	3.69	1.423	0.36	0.61	0.03	100.0	3.69	3.93	0.8	0.13	0.08	94.4	1.33	-	-	-	-	-	-
		50	15.25	1.03	1.42	0.86	0.1	0.04	94.4	1.14	1.423	0.45	0.55	0.0	100.0	3.19	1.421	0.44	0.56	0.0	100.0	3.28	3.923	0.96	0.03	0.01	100.0	1.06	-	-	-	-	-	-
		70	21.25	1.0	1.422	0.9	0.07	0.03	94.4	1.08	1.424	0.45	0.54	0.01	97.2	3.03	1.424	0.45	0.54	0.01	97.2	3.06	3.989	0.95	0.05	0.0	100.0	1.17	-	-	-	-	-	-
		100	29.25	1.0	1.423	0.97	0.03	0.0	100.0	1.08	1.422	0.78	0.22	0.0	100.0	1.61	1.424	0.78	0.22	0.0	100.0	1.64	3.901	1.0	0.0	0.0	100.0	1.0	-	-	-	-	-	-
ROVERS (144)	6.0	10	2.83	2.39	1.539	0.46	0.24	0.3	72.2	2.31	1.54	0.45	0.26	0.29	75.0	2.5	1.539	0.45	0.26	0.29	75.0	2.5	4.188	0.35	0.22	0.42	63.9	1.69	-	-	-	-	-	-
		30	5.75	1.39	1.542	0.65	0.21	0.14	91.7	1.56	1.54	0.53	0.34	0.14	94.4	2.28	1.541	0.53	0.34	0.14	94.4	2.28	4.209	0.59	0.19	0.22	86.1	1.33	-	-	-	-	-	-
		50	9.0	1.11	1.542	0.87	0.08	0.05	97.2	1.19	1.542	0.77	0.19	0.04	97.2	1.5	1.54	0.76	0.2	0.04	97.2	1.56	4.258	0.84	0.08	0.08	94.4	1.11	-	-	-	-	-	-
		70	12.42	1.06	1.543	0.93	0.05	0.02	100.0	1.11	1.542	0.86	0.13	0.01	100.0	1.39	1.54	0.86	0.13	0.01	100.0	1.42	4.185	0.93	0.03	0.04	97.2	1.03	-	-	-	-	-	-
		100	16.92	1.0	1.542	0.97	0.03	0.0	100.0	1.06	1.544	0.96	0.04	0.0	100.0	1.06	1.544	0.96	0.04	0.0	100.0	1.08	4.22	1.0	0.0	0.0	100.0	1.0	-	-	-	-	-	-
SATELLITE (108)	6.0	10	3.0	3.25	1.288	0.49	0.24	0.28	83.3	3.08	1.286	0.47	0.31	0.22	86.1	3.78	1.287	0.47	0.31	0.22	86.1	3.78	-	-	-	-	-	-	-	-	-	-	-	-
		30	5.33	1.78	1.287	0.54	0.27	0.2	77.8	2.17	1.29	0.47	0.44	0.09	86.1	3.69	1.286	0.47	0.44	0.09	86.1	3.69	-	-	-	-	-	-	-	-	-	-	-	-
		50	8.75	1.36	1.288	0.78	0.12	0.1	88.9	1.42	1.288	0.56	0.41	0.03	94.4	2.69	1.287	0.56	0.42	0.03	94.4	2.81	-	-	-	-	-	-	-	-	-	-	-	-
		70	11.75	1.33	1.289	0.86	0.09	0.05	97.2	1.47	1.29	0.64	0.35	0.01	100.0	2.83	1.288	0.63	0.36	0.01	100.0	3.0	-	-	-	-	-	-	-	-	-	-	-	-
		100	15.75	1.25	1.291	0.92	0.03	0.06	94.4	1.19	1.289	0.88	0.06	0.06	94.4	1.39	1.29	0.86	0.09	0.06	94.4	1.39	-	-	-	-	-	-	-	-	-	-	-	-
SOKOBAN (144)	8.7	10	4.33	1.83	3.838	0.31	0.38	0.31	58.3	2.47	3.835	0.34	0.49	0.16	80.6	4.81	3.838	0.34	0.49	0.16	80.6	4.81	9.806	0.29	0.3	0.41	41.7	1.36	-	-	-	-	-	-
		30	11.0	1.28	3.816	0.48	0.35	0.17	75.0	2.81	3.814	0.29	0.69	0.02	97.2	5.36	3.812	0.29	0.69	0.02	97.2	5.39	9.819	0.69	0.11	0.2	80.6	1.06	-	-	-	-	-	-
		50	17.08	1.33	3.821	0.5	0.4	0.1	94.4	4.22	3.82	0.32	0.66	0.02	94.4	5.89	3.823	0.31	0.66	0.02	94.4	5.97	9.882	0.75	0.06	0.18	91.7	1.08	-	-	-	-	-	-
		70	23.58	1.36	3.801	0.54	0.38	0.08	100.0	4.44	3.799	0.34	0.62	0.02	100.0	5.92	3.803	0.35	0.62	0.02	100.0	5.97	7.175	0.81	0.01	0.18	100.0	1.03	-	-	-	-	-	-
		100	32.67	1.33	3.817	0.35	0.56	0.09	94.4	5.97	3.814	0.34	0.66	0.0	97.2	6.56	3.811	0.34	0.66	0.0	97.2	6.56	6.1	0.8	0.02	0.18	94.4	1.03	-	-	-	-	-	-
Average					2.453	0.7	0.17	0.13	89.84	2.1	2.453	0.58	0.34	0.08	95.06	3.53	2.453	0.58	0.35	0.08	95.06	3.63	4.61	0.48	0.08	0.15	59.44	0.91	0.0	0.0	0.0	0.0	0.0	0.0

Table 2: Results for weighted observation sequences, with suboptimal observations. Each observation ω_i receives weight i.