

Additional file 2 - ***Elliptic scan*** method with and without a penalty, ***Flexible scan*** method with and without a restriction and ***Genetic Algorithm*** with and without a non-compactness penalty

	"Small Clusters"						"Moderate Clusters"						"Large Clusters"					
	#1		#2		#3		#4		#5		#6		#7		#8		#9	
	Linear No. LZ = 6		U-Shaped No. LZ = 10		Compact No. LZ = 8		Linear No. LZ = 7		U-Shaped No. LZ = 7		Compact No. LZ = 11		Linear No. LZ = 12		U-Shaped No. LZ = 16		Compact No. LZ = 13	
Scan-e	Penalty						Penalty						Penalty					
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Detected cluster size	10.00	9.30	10.00	9.30	11.10	9.60	11.10	10.30	11.10	10.30	13.50	12.50	14.40	13.30	14.40	13.30	14.30	13.40
Usual power	0.51	0.54	0.51	0.54	0.50	0.57	0.95	0.95	0.95	0.95	0.98	0.99	1.00	1.00	1.00	1.00	1.00	1.00
"At least one LZ" power	0.43	0.44	0.39	0.38	0.46	0.50	0.94	0.94	0.94	0.94	0.98	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Average sensitivity	0.49	0.44	0.20	0.23	0.63	0.62	0.64	0.56	0.46	0.43	0.75	0.81	0.71	0.60	0.45	0.43	0.78	0.84
Average PPV ¹	0.38	0.37	0.24	0.27	0.54	0.60	0.47	0.44	0.33	0.35	0.65	0.75	0.61	0.59	0.52	0.53	0.73	0.84
Average cost	10.10	10.10	16.10	14.70	9.10	7.70	9.20	9.40	11.70	11.30	8.10	5.70	9.30	10.90	16.00	15.50	6.90	4.60
Flex	Restriction						Restriction						Restriction					
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Detected cluster size	9.20	6.10	9.60	7.00	9.40	6.80	9.30	6.60	9.90	6.70	10.60	8.40	10.70	7.50	11.20	7.90	11.40	8.40
Usual power	0.52	0.47	0.57	0.49	0.52	0.48	0.93	0.94	0.92	0.91	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00
"At least one LZ" power	0.44	0.40	0.54	0.45	0.47	0.42	0.92	0.92	0.91	0.89	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Average sensitivity	0.44	0.35	0.51	0.40	0.60	0.50	0.57	0.53	0.68	0.51	0.64	0.54	0.50	0.42	0.43	0.34	0.64	0.51
Average PPV ¹	0.31	0.40	0.55	0.61	0.54	0.62	0.45	0.59	0.49	0.55	0.67	0.72	0.57	0.67	0.61	0.70	0.74	0.79
Average cost	9.90	7.90	9.40	8.90	7.80	6.80	8.30	6.30	7.40	6.60	7.60	7.50	10.70	9.50	13.60	13.00	7.70	8.10
Genetic algorithm GA	Penalty						Penalty						Penalty					
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Detected cluster size	19.60	9.50	19.70	9.50	19.70	9.20	19.60	9.80	19.70	10.00	19.70	11.50	19.50	8.50	19.80	8.70	19.70	10.30
Usual power	0.47	0.32	0.44	0.41	0.45	0.43	0.92	0.95	0.88	0.95	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
"At least one LZ" power	0.40	0.25	0.40	0.37	0.39	0.34	0.92	0.94	0.86	0.92	0.96	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Average sensitivity	0.52	0.41	0.62	0.47	0.60	0.49	0.68	0.54	0.62	0.54	0.57	0.78	0.60	0.45	0.52	0.35	0.56	0.60
Average PPV ¹	0.16	0.29	0.32	0.55	0.25	0.52	0.25	0.42	0.22	0.41	0.32	0.77	0.37	0.68	0.42	0.69	0.38	0.76
Average cost	19.30	10.60	17.30	10.10	18.10	9.30	17.10	9.20	18.00	9.50	18.30	5.30	17.00	9.60	19.10	13.40	18.00	7.70

¹ PPV : positive predictive value