

			The estimated number of change points					Total
$(\mu_1, \mu_2, \mu_3, \mu_4)$	$(\sigma_1, \sigma_2, \sigma_3, \sigma_4)$	(t_1, t_2, t_3)		2	3	4	5+	
(1,2,-1,0)	(0.1,0.1,0.1,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	999	1	0	
			PMIC(C=1)	0	974	23	3	
			PMIC(C=10)	0	992	7	1	
			ZMIC	0	977	20	3	
			SIC	0	300	89	611	
		Front¢er	JMIC($\alpha = 1/2$)	0	987	13	0	
			JMIC($\alpha = 1/3$)	0	983	17	0	
			PMIC(C=1)	0	953	39	8	
			PMIC(C=10)	0	969	27	4	
			ZMIC	0	962	33	5	
			SIC	0	232	82	686	
		Front&end	JMIC($\alpha = 1/2$)	0	964	36	0	
			JMIC($\alpha = 1/3$)	0	963	37	0	
			PMIC(C=1)	0	933	57	10	
			PMIC(C=10)	0	938	54	8	
			ZMIC	0	945	50	5	
			SIC	0	172	88	740	
		Center&end	JMIC($\alpha = 1/2$)	0	986	14	0	
			JMIC($\alpha = 1/3$)	0	986	14	0	
			PMIC(C=1)	0	961	35	4	
			PMIC(C=10)	0	977	23	0	
			ZMIC	0	972	28	0	
			SIC	0	186	121	693	

Supplemental Table 1: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 3$ and $n = 500$. Evenly spaced=(125,250,375), Front& center=(50,210,290), Front&end=(50,370,450), Center&end=(210,290,450).

$(\mu_1, \mu_2, \mu_3, \mu_4)$	$(\sigma_1, \sigma_2, \sigma_3, \sigma_4)$	(t_1, t_2, t_3)		The estimated number of change points				Total
				2	3	4	5+	
(1,2,-1,0)	(0.1,0.1,0.1,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	979	19	2	
			PMIC(C=10)	0	992	7	1	
			ZMIC	0	982	17	1	
			SIC	0	290	89	621	
		Front¢er	JMIC($\alpha = 1/2$)	0	993	7	0	
			JMIC($\alpha = 1/3$)	0	993	7	0	
			PMIC(C=1)	0	972	20	8	
			PMIC(C=10)	0	979	13	8	
			ZMIC	0	976	16	8	
			SIC	0	252	82	666	
		Front&end	JMIC($\alpha = 1/2$)	0	967	32	1	
			JMIC($\alpha = 1/3$)	0	963	36	1	
			PMIC(C=1)	0	939	46	15	
			PMIC(C=10)	0	944	42	14	
			ZMIC	0	944	42	14	
			SIC	0	203	112	685	
		Center&end	JMIC($\alpha = 1/2$)	0	994	6	0	
			JMIC($\alpha = 1/3$)	0	993	7	0	
			PMIC(C=1)	0	974	25	1	
			PMIC(C=10)	0	983	17	0	
			ZMIC	0	978	21	1	
			SIC	0	214	122	664	

Supplemental Table 2: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 3$ and $n = 1000$. Evenly spaced=(250,500,750), Front& center=(100,420,580), Front&end=(100,740,900), Center&end=(420,580,900).

			The estimated number of change points					Total
$(\mu_1, \mu_2, \mu_3, \mu_4)$	$(\sigma_1, \sigma_2, \sigma_3, \sigma_4)$	(t_1, t_2, t_3)		2	3	4	5+	
(1,2,-1,0)	(0.1,0.1,0.1,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	986	14	0	
			PMIC(C=10)	0	993	7	0	
			ZMIC	0	988	12	0	
			SIC	0	304	95	601	
		Front¢er	JMIC($\alpha = 1/2$)	0	988	12	0	
			JMIC($\alpha = 1/3$)	0	988	12	0	
			PMIC(C=1)	0	966	26	8	
			PMIC(C=10)	0	975	18	7	
			ZMIC	0	971	23	6	
			SIC	0	269	79	652	
		Front&end	JMIC($\alpha = 1/2$)	0	960	40	0	
			JMIC($\alpha = 1/3$)	0	959	41	0	
			PMIC(C=1)	0	942	51	7	
			PMIC(C=10)	0	950	44	6	
			ZMIC	0	946	49	5	
			SIC	0	200	112	688	
		Center&end	JMIC($\alpha = 1/2$)	0	991	9	0	
			JMIC($\alpha = 1/3$)	0	990	10	0	
			PMIC(C=1)	0	973	27	0	
			PMIC(C=10)	0	980	20	0	
			ZMIC	0	976	24	0	
			SIC	0	206	118	676	

Supplemental Table 3: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 3$ and $n = 1500$. Evenly spaced=(375,750,1125), Front& center=(150,630,870), Front&end=(150,1110,1350), Center&end=(630,870,1350).

$(\mu_1, \mu_2, \mu_3, \mu_4)$	$(\sigma_1, \sigma_2, \sigma_3, \sigma_4)$	(t_1, t_2, t_3)		The estimated number of change points				Total
				2	3	4	5+	
(1,2,-1,0)	(0.1,0.1,0.1,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	988	11	1	
			PMIC(C=10)	0	996	3	1	
			ZMIC	0	989	10	1	
			SIC	0	284	89	627	
		Front¢er	JMIC($\alpha = 1/2$)	0	987	13	0	
			JMIC($\alpha = 1/3$)	0	985	15	0	
			PMIC(C=1)	0	974	21	5	
			PMIC(C=10)	0	981	15	4	
			ZMIC	0	976	20	4	
			SIC	0	242	65	693	
		Front&end	JMIC($\alpha = 1/2$)	0	964	36	0	
			JMIC($\alpha = 1/3$)	0	961	39	0	
			PMIC(C=1)	0	947	45	8	
			PMIC(C=10)	0	950	44	6	
			ZMIC	0	948	45	7	
			SIC	0	208	96	696	
		Center&end	JMIC($\alpha = 1/2$)	0	988	12	0	
			JMIC($\alpha = 1/3$)	0	988	12	0	
			PMIC(C=1)	0	977	23	0	
			PMIC(C=10)	0	985	15	0	
			ZMIC	0	979	21	0	
			SIC	0	221	105	674	

Supplemental Table 4: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 3$ and $n = 2000$. Evenly spaced=(500,1000,1500), Front& center=(200,840,1160), Front&end=(200,1480,1800), Center&end=(840,1160,1800).

$(\mu_1, \mu_2, \mu_3, \mu_4)$	$(\sigma_1, \sigma_2, \sigma_3, \sigma_4)$	(t_1, t_2, t_3)		The estimated number of change points				Total
				2	3	4	5+	
(1,2,-1,0)	(0.1,0.1,0.1,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	990	10	0	
			PMIC(C=10)	0	994	6	0	
			ZMIC	0	991	9	0	
			SIC	0	301	74	625	
		Front¢er	JMIC($\alpha = 1/2$)	0	991	9	0	
			JMIC($\alpha = 1/3$)	0	989	11	0	
			PMIC(C=1)	0	980	16	4	
			PMIC(C=10)	0	982	14	4	
			ZMIC	0	981	15	4	
			SIC	0	247	84	669	
		Front&end	JMIC($\alpha = 1/2$)	0	974	24	2	
			JMIC($\alpha = 1/3$)	0	971	27	2	
			PMIC(C=1)	0	954	34	12	
			PMIC(C=10)	0	961	29	10	
			ZMIC	0	957	33	10	
			SIC	0	224	98	678	
		Center&end	JMIC($\alpha = 1/2$)	0	991	9	0	
			JMIC($\alpha = 1/3$)	0	991	9	0	
			PMIC(C=1)	0	984	15	1	
			PMIC(C=10)	0	991	9	0	
			ZMIC	0	984	15	1	
			SIC	0	213	120	667	

Supplemental Table 5: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 3$ and $n = 3000$. Evenly spaced=(750,1500,2250), Front& center=(300,1260,1740), Front&end=(300,2220,2700), Center&end=(1260,1740,2700).

$(\mu_1, \mu_2, \mu_3, \mu_4)$	$(\sigma_1, \sigma_2, \sigma_3, \sigma_4)$	(t_1, t_2, t_3)		The estimated number of change points				Total
				2	3	4	5+	
(1,2,-1,0)	(0.1,0.1,0.1,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	996	4	0	
			PMIC(C=10)	0	999	1	0	
			ZMIC	0	997	3	0	
			SIC	0	281	103	616	
		Front¢er	JMIC($\alpha = 1/2$)	0	987	13	0	
			JMIC($\alpha = 1/3$)	0	986	14	0	
			PMIC(C=1)	0	968	25	7	
			PMIC(C=10)	0	976	18	6	
			ZMIC	0	971	23	6	
			SIC	0	260	86	654	
		Front&end	JMIC($\alpha = 1/2$)	0	975	24	1	
			JMIC($\alpha = 1/3$)	0	972	27	1	
			PMIC(C=1)	0	956	34	10	
			PMIC(C=10)	0	963	30	7	
			ZMIC	0	959	32	9	
			SIC	0	193	104	703	
		Center&end	JMIC($\alpha = 1/2$)	0	993	7	0	
			JMIC($\alpha = 1/3$)	0	992	8	0	
			PMIC(C=1)	0	983	17	0	
			PMIC(C=10)	0	988	12	0	
			ZMIC	0	983	17	0	
			SIC	0	233	132	635	

Supplemental Table 6: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 3$ and $n = 4500$. Evenly spaced=(1125,2250,3375), Front& center=(450,1890,2610), Front&end=(450,3330,4050), Center&end=(1890,2610,4050).

			The estimated number of change points					Total
$(\mu_1, \mu_2, \mu_3, \mu_4)$	$(\sigma_1, \sigma_2, \sigma_3, \sigma_4)$	(t_1, t_2, t_3)		2	3	4	5+	
(1,2,-1,0)	(0.1,0.1,0.1,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	995	5	0	
			PMIC(C=10)	0	997	3	0	
			ZMIC	0	995	5	0	
			SIC	0	307	86	607	
		Front¢er	JMIC($\alpha = 1/2$)	0	986	14	0	
			JMIC($\alpha = 1/3$)	0	986	14	0	
			PMIC(C=1)	0	971	23	6	
			PMIC(C=10)	0	979	17	4	
			ZMIC	0	973	22	5	
			SIC	0	279	83	638	
		Front&end	JMIC($\alpha = 1/2$)	0	970	30	0	
			JMIC($\alpha = 1/3$)	0	970	30	0	
			PMIC(C=1)	0	958	35	7	
			PMIC(C=10)	0	963	30	7	
			ZMIC	0	959	34	7	
			SIC	0	209	103	688	
		Center&end	JMIC($\alpha = 1/2$)	0	993	7	0	
			JMIC($\alpha = 1/3$)	0	992	8	0	
			PMIC(C=1)	0	990	10	0	
			PMIC(C=10)	0	992	8	0	
			ZMIC	0	991	9	0	
			SIC	0	218	110	672	

Supplemental Table 7: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 3$ and $n = 6000$. Evenly spaced=(1500,3000,4500), Front& center=(600,2520,3480), Front&end=(600,4440,5400), Center&end=(2520,3480,5400).

$(\mu_1, \mu_2, \mu_3, \mu_4)$	$(\sigma_1, \sigma_2, \sigma_3, \sigma_4)$	(t_1, t_2, t_3)		The estimated number of change points				Total
				2	3	4	5+	
(1,2,-1,0)	(0.1,0.1,0.1,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	994	6	0	
			PMIC(C=10)	0	998	2	0	
			ZMIC	0	994	6	0	
			SIC	0	304	71	625	
		Front¢er	JMIC($\alpha = 1/2$)	0	982	18	0	
			JMIC($\alpha = 1/3$)	0	981	19	0	
			PMIC(C=1)	0	965	29	6	
			PMIC(C=10)	0	974	23	3	
			ZMIC	0	967	28	5	
			SIC	0	273	82	645	
		Front&end	JMIC($\alpha = 1/2$)	0	970	28	2	
			JMIC($\alpha = 1/3$)	0	970	28	2	
			PMIC(C=1)	0	953	33	14	
			PMIC(C=10)	0	957	33	10	
			ZMIC	0	957	32	11	
			SIC	0	221	88	691	
		Center&end	JMIC($\alpha = 1/2$)	0	988	12	0	
			JMIC($\alpha = 1/3$)	0	988	12	0	
			PMIC(C=1)	0	986	13	1	
			PMIC(C=10)	0	988	12	0	
			ZMIC	0	986	13	1	
			SIC	0	221	142	637	

Supplemental Table 8: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 3$ and $n = 7500$. Evenly spaced=(1875,3750,5625), Front& center=(750,3150,4350), Front&end=(750,5550,6750), Center&end=(3150,4350,6750).

(μ_1, \dots, μ_6)	$(\sigma_1, \dots, \sigma_6)$	(t_1, \dots, t_5)		The estimated number of change points				Total
				4	5	6	7+	
(1,-1,0,-1,2,1)	(0.1, ..., 0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	963	33	4	
			PMIC(C=10)	0	968	30	2	
			ZMIC	0	970	28	2	
			SIC	0	427	127	446	
		Front& center	JMIC($\alpha = 1/2$)	0	926	74	0	
			JMIC($\alpha = 1/3$)	0	923	77	0	
			PMIC(C=1)	0	886	102	12	
			PMIC(C=10)	0	894	94	12	
			ZMIC	0	899	91	10	
			SIC	0	283	110	607	
		Front&end	JMIC($\alpha = 1/2$)	0	924	74	2	
			JMIC($\alpha = 1/3$)	0	924	74	2	
			PMIC(C=1)	0	896	94	10	
			PMIC(C=10)	0	896	93	11	
			ZMIC	0	906	86	8	
			SIC	0	229	145	626	
		Center&end	JMIC($\alpha = 1/2$)	0	854	139	7	
			JMIC($\alpha = 1/3$)	0	854	139	7	
			PMIC(C=1)	0	828	160	12	
			PMIC(C=10)	0	836	153	11	
			ZMIC	0	836	155	9	
			SIC	0	211	194	595	

Supplemental Table 9: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 5$ and $n = 500$. Evenly spaced=(83,166,250,333,416), Front& center=(17,70,197,250,303), Front&end=(33,86,360,413,467), Center&end=(197,250,360,413,467).

(μ_1, \dots, μ_6)	$(\sigma_1, \dots, \sigma_6)$	(t_1, \dots, t_5)		The estimated number of change points				Total
				4	5	6	7+	
(1,-1,0,-1,2,1)	(0.1, ..., 0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	979	20	1	
			PMIC(C=10)	0	985	14	1	
			ZMIC	0	983	16	1	
			SIC	0	416	136	448	
		Front& center	JMIC($\alpha = 1/2$)	0	913	86	1	
			JMIC($\alpha = 1/3$)	0	909	89	2	
			PMIC(C=1)	0	893	93	14	
			PMIC(C=10)	0	897	91	12	
			ZMIC	0	898	91	11	
			SIC	0	286	135	579	
		Front&end	JMIC($\alpha = 1/2$)	0	904	93	3	
			JMIC($\alpha = 1/3$)	0	900	97	3	
			PMIC(C=1)	0	881	111	8	
			PMIC(C=10)	0	884	109	7	
			ZMIC	0	883	110	7	
			SIC	0	216	145	639	
		Center&end	JMIC($\alpha = 1/2$)	0	872	118	10	
			JMIC($\alpha = 1/3$)	0	872	118	10	
			PMIC(C=1)	0	850	139	11	
			PMIC(C=10)	0	859	129	12	
			ZMIC	0	856	134	10	
			SIC	0	216	187	597	

Supplemental Table 10: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 5$ and $n = 1000$. Evenly spaced=(166,333,500,666,833), Front& center=(33,140,393,500,607), Front&end=(67,174,719,826,933), Center&end=(393,500,719,826,933).

(μ_1, \dots, μ_6)	$(\sigma_1, \dots, \sigma_6)$	(t_1, \dots, t_5)		The estimated number of change points				Total
				4	5	6	7+	
(1,-1,0,-1,2,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	986	12	2	
			PMIC(C=10)	0	993	6	1	
			ZMIC	0	992	7	1	
			SIC	0	416	144	440	
		Front& center	JMIC($\alpha = 1/2$)	0	924	74	2	
			JMIC($\alpha = 1/3$)	0	922	76	2	
			PMIC(C=1)	0	897	82	21	
			PMIC(C=10)	0	902	80	18	
			ZMIC	0	902	81	17	
			SIC	0	262	139	599	
		Front&end	JMIC($\alpha = 1/2$)	0	903	97	0	
			JMIC($\alpha = 1/3$)	0	902	98	0	
			PMIC(C=1)	0	885	106	9	
			PMIC(C=10)	0	888	103	9	
			ZMIC	0	891	102	7	
			SIC	0	223	164	613	
		Center&end	JMIC($\alpha = 1/2$)	0	853	140	7	
			JMIC($\alpha = 1/3$)	0	853	140	7	
			PMIC(C=1)	0	841	151	8	
			PMIC(C=10)	0	844	148	8	
			ZMIC	0	843	149	8	
			SIC	0	235	154	611	

Supplemental Table 11: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 5$ and $n = 1500$. Evenly spaced=(250,500,750,1000,1250), Front& center=(50,210,590,750,910), Front&end=(100,260,1080,1240,1400), Center&end=(590,750,1080,1240,1400).

(μ_1, \dots, μ_6)	$(\sigma_1, \dots, \sigma_6)$	(t_1, \dots, t_5)		The estimated number of change points				Total
				4	5	6	7+	
(1,-1,0,-1,2,1)	(0.1, ..., 0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	983	14	3	
			PMIC(C=10)	0	990	10	0	
			ZMIC	0	989	11	0	
			SIC	0	426	133	441	
		Front& center	JMIC($\alpha = 1/2$)	0	928	69	3	
			JMIC($\alpha = 1/3$)	0	928	69	3	
			PMIC(C=1)	0	908	79	13	
			PMIC(C=10)	0	913	74	13	
			ZMIC	0	913	77	10	
			SIC	0	292	130	578	
		Front&end	JMIC($\alpha = 1/2$)	0	917	79	4	
			JMIC($\alpha = 1/3$)	0	917	79	4	
			PMIC(C=1)	0	904	83	13	
			PMIC(C=10)	0	906	81	13	
			ZMIC	0	905	82	13	
			SIC	0	220	157	623	
		Center&end	JMIC($\alpha = 1/2$)	0	873	117	10	
			JMIC($\alpha = 1/3$)	0	873	117	10	
			PMIC(C=1)	0	865	123	12	
			PMIC(C=10)	0	866	124	10	
			ZMIC	0	868	122	10	
			SIC	0	231	194	575	

Supplemental Table 12: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 5$ and $n = 2000$. Evenly spaced=(334,667,1000,1333,1666), Front& center=(67,280,787,1000,1213), Front&end=(133,346,1440,1653,1865), Center&end=(787,1000,1440,1653,1865).

(μ_1, \dots, μ_6)	$(\sigma_1, \dots, \sigma_6)$	(t_1, \dots, t_5)		The estimated number of change points				Total
				4	5	6	7+	
(1,-1,0,-1,2,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	988	12	0	
			PMIC(C=10)	0	994	6	0	
			ZMIC	0	991	9	0	
			SIC	0	377	108	515	
		Front& center	JMIC($\alpha = 1/2$)	0	928	68	4	
			JMIC($\alpha = 1/3$)	0	927	69	4	
			PMIC(C=1)	0	914	71	15	
			PMIC(C=10)	0	914	71	15	
			ZMIC	0	917	71	12	
			SIC	0	236	113	651	
		Front&end	JMIC($\alpha = 1/2$)	0	910	87	3	
			JMIC($\alpha = 1/3$)	0	909	88	3	
			PMIC(C=1)	0	894	92	14	
			PMIC(C=10)	0	896	90	14	
			ZMIC	0	895	92	13	
			SIC	0	182	144	674	
		Center&end	JMIC($\alpha = 1/2$)	0	874	115	11	
			JMIC($\alpha = 1/3$)	0	874	115	11	
			PMIC(C=1)	0	867	122	11	
			PMIC(C=10)	0	869	120	11	
			ZMIC	0	868	121	11	
			SIC	0	195	158	647	

Supplemental Table 13: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 5$ and $n = 3000$. Evenly spaced=(500,1000,1500,2000,2500), Front& center=(100,420,1180,1500,1820), Front&end=(200,520,2160,2480,2800), Center&end=(1180,1500,2160,2480,2800).

(μ_1, \dots, μ_6)	$(\sigma_1, \dots, \sigma_6)$	(t_1, \dots, t_5)		The estimated number of change points				Total
				4	5	6	7+	
(1,-1,0,-1,2,1)	(0.1, ..., 0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	999	1	0	1000
			JMIC($\alpha = 1/3$)	0	999	1	0	
			PMIC(C=1)	0	990	10	0	
			PMIC(C=10)	0	993	7	0	
			ZMIC	0	991	9	0	
			SIC	0	372	135	493	
		Front& center	JMIC($\alpha = 1/2$)	0	938	61	1	
			JMIC($\alpha = 1/3$)	0	936	62	2	
			PMIC(C=1)	0	921	66	13	
			PMIC(C=10)	0	924	64	12	
			ZMIC	0	924	64	12	
			SIC	0	245	128	627	
		Front&end	JMIC($\alpha = 1/2$)	0	904	90	6	
			JMIC($\alpha = 1/3$)	0	904	90	6	
			PMIC(C=1)	0	889	99	12	
			PMIC(C=10)	0	891	98	11	
			ZMIC	0	891	98	11	
			SIC	0	182	146	672	
		Center&end	JMIC($\alpha = 1/2$)	0	864	123	13	
			JMIC($\alpha = 1/3$)	0	864	123	13	
			PMIC(C=1)	0	859	128	13	
			PMIC(C=10)	0	862	125	13	
			ZMIC	0	860	127	13	
			SIC	0	191	153	656	

Supplemental Table 14: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 5$ and $n = 4500$. Evenly spaced=(750,1500,2250,3000,3750), Front& center=(150,630,1770,2250,2730), Front&end=(300,780,3240,3720,4200), Center&end=(1770,2250,3240,3720,4200).

(μ_1, \dots, μ_6)	$(\sigma_1, \dots, \sigma_6)$	(t_1, \dots, t_5)		The estimated number of change points				Total
				4	5	6	7+	
(1,-1,0,-1,2,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	990	10	0	
			PMIC(C=10)	0	994	6	0	
			ZMIC	0	993	7	0	
			SIC	0	365	117	518	
		Front& center	JMIC($\alpha = 1/2$)	0	926	70	4	
			JMIC($\alpha = 1/3$)	0	926	70	4	
			PMIC(C=1)	0	911	75	14	
			PMIC(C=10)	0	913	74	13	
			ZMIC	0	912	75	13	
			SIC	0	252	116	632	
		Front&end	JMIC($\alpha = 1/2$)	0	909	87	4	
			JMIC($\alpha = 1/3$)	0	909	87	4	
			PMIC(C=1)	0	890	90	20	
			PMIC(C=10)	0	892	88	20	
			ZMIC	0	893	89	18	
			SIC	0	178	130	692	
		Center&end	JMIC($\alpha = 1/2$)	0	877	110	13	
			JMIC($\alpha = 1/3$)	0	877	110	13	
			PMIC(C=1)	0	874	112	14	
			PMIC(C=10)	0	874	112	14	
			ZMIC	0	874	112	14	
			SIC	0	209	157	634	

Supplemental Table 15: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 5$ and $n = 6000$. Evenly spaced=(1000,2000,3000,4000,5000), Front& center=(200,840,2360,3000,3640), Front&end=(400,1040,4320,4960,5600), Center&end=(2360,3000,4320,4960,5600).

(μ_1, \dots, μ_6)	$(\sigma_1, \dots, \sigma_6)$	(t_1, \dots, t_5)		The estimated number of change points				Total
				4	5	6	7+	
(1,-1,0,-1,2,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	1000	0	0	
			PMIC(C=1)	0	990	10	0	
			PMIC(C=10)	0	996	4	0	
			ZMIC	0	990	10	0	
			SIC	0	357	115	528	
		Front& center	JMIC($\alpha = 1/2$)	0	927	70	3	
			JMIC($\alpha = 1/3$)	0	927	70	3	
			PMIC(C=1)	0	917	71	12	
			PMIC(C=10)	0	918	72	10	
			ZMIC	0	918	72	10	
			SIC	0	259	131	610	
		Front&end	JMIC($\alpha = 1/2$)	0	920	78	2	
			JMIC($\alpha = 1/3$)	0	920	78	2	
			PMIC(C=1)	0	910	81	9	
			PMIC(C=10)	0	911	81	8	
			ZMIC	0	910	81	9	
			SIC	0	208	127	665	
		Center&end	JMIC($\alpha = 1/2$)	0	849	142	9	
			JMIC($\alpha = 1/3$)	0	849	142	9	
			PMIC(C=1)	0	847	144	9	
			PMIC(C=10)	0	849	142	9	
			ZMIC	0	847	144	9	
			SIC	0	211	140	649	

Supplemental Table 16: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 5$ and $n = 7500$. Evenly spaced=(1250,2500,3750,5000,6250), Front& center=(250,1050,2950,3750,4550), Front&end=(500,1300,5400,6200,7000), Center&end=(2950,3750,5400,6200,7000).

(μ_1, \dots, μ_9)	$(\sigma_1, \dots, \sigma_9)$	(t_1, \dots, t_8)		The estimated number of change points					Total
				6	7	8	9	10+	
(1,-1,0,-1,2,1,2,0,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	0	1000	0	0	
			PMIC(C=1)	0	0	964	31	5	
			PMIC(C=10)	0	0	969	26	5	
			ZMIC	0	0	972	24	4	
			SIC	0	0	551	153	296	
		Front& center	JMIC($\alpha = 1/2$)	2	0	761	211	26	
			JMIC($\alpha = 1/3$)	0	0	760	212	28	
			PMIC(C=1)	0	0	747	218	35	
			PMIC(C=10)	0	0	748	215	37	
			ZMIC	0	0	749	216	35	
			SIC	0	0	225	194	581	
		Front&end	JMIC($\alpha = 1/2$)	0	0	745	220	35	
			JMIC($\alpha = 1/3$)	0	0	744	221	35	
			PMIC(C=1)	0	0	718	236	46	
			PMIC(C=10)	0	0	716	238	46	
			ZMIC	0	0	726	230	44	
			SIC	0	0	195	222	583	
		Center&end	JMIC($\alpha = 1/2$)	1	0	713	234	52	
			JMIC($\alpha = 1/3$)	0	0	713	234	53	
			PMIC(C=1)	0	0	690	252	58	
			PMIC(C=10)	0	0	691	253	56	
			ZMIC	0	0	692	254	54	
			SIC	0	0	237	245	518	

Supplemental Table 17: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 8$ and $n = 500$. Evenly spaced=(60,115,170,225,280,335,390,445), Front& center=(18,53,88,210,245,280,315,350), Front&end=(30,65,100,325,360,395,430,465), Center&end=(180,215,250,325,360,395,430,465).

(μ_1, \dots, μ_9)	$(\sigma_1, \dots, \sigma_9)$	(t_1, \dots, t_8)		The estimated number of change points					Total
				6	7	8	9	10+	
(1,-1,0,-1,2,1,2,0,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	0	999	1	0	1000
			JMIC($\alpha = 1/3$)	0	0	999	1	0	
			PMIC(C=1)	0	0	963	33	4	
			PMIC(C=10)	0	0	968	28	4	
			ZMIC	0	0	970	27	3	
			SIC	0	0	548	153	299	
		Front& center	JMIC($\alpha = 1/2$)	0	0	772	202	26	
			JMIC($\alpha = 1/3$)	0	0	771	203	26	
			PMIC(C=1)	0	0	754	205	41	
			PMIC(C=10)	0	0	755	205	40	
			ZMIC	0	0	762	202	36	
			SIC	0	0	236	202	562	
		Front&end	JMIC($\alpha = 1/2$)	0	0	753	209	38	
			JMIC($\alpha = 1/3$)	0	0	752	210	38	
			PMIC(C=1)	0	0	736	220	44	
			PMIC(C=10)	0	0	738	218	44	
			ZMIC	0	0	741	215	44	
			SIC	0	0	206	179	615	
		Center&end	JMIC($\alpha = 1/2$)	0	0	694	270	36	
			JMIC($\alpha = 1/3$)	0	0	694	270	36	
			PMIC(C=1)	0	0	686	274	40	
			PMIC(C=10)	0	0	687	274	39	
			ZMIC	0	0	690	271	39	
			SIC	0	0	233	256	511	

Supplemental Table 18: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 8$ and $n = 1000$. Evenly spaced=(111,222,333,444,555,666,777,888), Front& center=(35,106,177,420,491,562,633,704), Front&end=(60,131,202,646,717,788,859,930), Center&end=(358,429,500,646,717,788,859,930).

(μ_1, \dots, μ_9)	$(\sigma_1, \dots, \sigma_9)$	(t_1, \dots, t_8)		The estimated number of change points					Total
				6	7	8	9	10+	
(1,-1,0,-1,2,1,2,0,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	0	1000	0	0	
			PMIC(C=1)	0	0	971	26	3	
			PMIC(C=10)	0	0	977	23	0	
			ZMIC	0	0	977	23	0	
			SIC	0	0	532	165	303	
		Front& center	JMIC($\alpha = 1/2$)	0	0	768	194	38	
			JMIC($\alpha = 1/3$)	0	0	768	194	38	
			PMIC(C=1)	0	0	751	199	50	
			PMIC(C=10)	0	0	752	199	49	
			ZMIC	0	0	753	200	47	
			SIC	0	0	227	179	594	
		Front&end	JMIC($\alpha = 1/2$)	0	0	759	212	29	
			JMIC($\alpha = 1/3$)	0	0	759	212	29	
			PMIC(C=1)	0	0	748	215	37	
			PMIC(C=10)	0	0	750	214	36	
			ZMIC	0	0	751	214	35	
			SIC	0	0	221	183	596	
		Center&end	JMIC($\alpha = 1/2$)	0	0	696	256	48	
			JMIC($\alpha = 1/3$)	0	0	696	256	48	
			PMIC(C=1)	0	0	691	256	53	
			PMIC(C=10)	0	0	692	256	52	
			ZMIC	0	0	693	255	52	
			SIC	0	0	235	224	541	

Supplemental Table 19: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 8$ and $n = 1500$. Evenly spaced=(166,333,500,666,833,1000,1166,1333), Front& center=(53,159,265,630,736,842,948,1054), Front&end=(90,196,302,971,1077,1183,1289,1395), Center&end=(539,644,750,971,1077,1183,1289,1395).

(μ_1, \dots, μ_9)	$(\sigma_1, \dots, \sigma_9)$	(t_1, \dots, t_8)		The estimated number of change points					Total
				6	7	8	9	10+	
(1,-1,0,-1,2,1,2,0,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	0	1000	0	0	
			PMIC(C=1)	0	0	979	21	0	
			PMIC(C=10)	0	0	982	18	0	
			ZMIC	0	0	981	19	0	
			SIC	0	0	559	159	282	
		Front& center	JMIC($\alpha = 1/2$)	0	0	768	202	30	
			JMIC($\alpha = 1/3$)	0	0	766	204	30	
			PMIC(C=1)	0	0	749	210	41	
			PMIC(C=10)	0	0	752	209	39	
			ZMIC	0	0	752	211	37	
			SIC	0	0	226	178	596	
		Front&end	JMIC($\alpha = 1/2$)	0	0	789	183	28	
			JMIC($\alpha = 1/3$)	0	0	789	183	28	
			PMIC(C=1)	0	0	778	185	37	
			PMIC(C=10)	0	0	782	182	36	
			ZMIC	0	0	781	183	36	
			SIC	0	0	231	187	582	
		Center&end	JMIC($\alpha = 1/2$)	0	0	710	244	46	
			JMIC($\alpha = 1/3$)	0	0	710	244	46	
			PMIC(C=1)	0	0	703	246	51	
			PMIC(C=10)	0	0	704	247	49	
			ZMIC	0	0	705	246	49	
			SIC	0	0	233	265	502	

Supplemental Table 20: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 8$ and $n = 2000$. Evenly spaced=(222,444,666,888,1110,1332,1554,1776), Front& center=(70,212,354,840,982,1124,1266,1408), Front&end=(120,262,404,1292,1434,1576,1718,1860), Center&end=(716,858,1000,1292,1434,1576,1718,1860).

(μ_1, \dots, μ_9)	$(\sigma_1, \dots, \sigma_9)$	(t_1, \dots, t_8)		The estimated number of change points					Total
				6	7	8	9	10+	
(1,-1,0,-1,2,1,2,0,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	0	999	1	0	1000
			PMIC(C=1)	0	0	978	21	1	
			PMIC(C=10)	0	0	983	17	0	
			ZMIC	0	0	984	16	0	
			SIC	0	0	547	154	299	
		Front& center	JMIC($\alpha = 1/2$)	0	0	747	218	35	
			JMIC($\alpha = 1/3$)	0	0	747	218	35	
			PMIC(C=1)	0	0	735	221	44	
			PMIC(C=10)	0	0	737	220	43	
			ZMIC	0	0	738	219	43	
		Front&end	SIC	0	0	235	202	563	
			JMIC($\alpha = 1/2$)	0	0	799	178	23	
			JMIC($\alpha = 1/3$)	0	0	799	178	23	
			PMIC(C=1)	0	0	789	183	28	
			PMIC(C=10)	0	0	789	182	29	
		Center&end	ZMIC	0	0	789	183	28	
			SIC	0	0	228	195	577	
			JMIC($\alpha = 1/2$)	0	0	706	239	55	
			JMIC($\alpha = 1/3$)	0	0	706	239	55	
			PMIC(C=1)	0	0	699	243	58	
			PMIC(C=10)	0	0	700	243	57	
			ZMIC	0	0	699	244	57	
			SIC	0	0	235	233	532	

Supplemental Table 21: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 8$ and $n = 3000$. Evenly spaced=(334,667,1000,1333,1666,2000,2333,2666), Front& center=(105,318,531,1260,1473,1686,1899,2112), Front&end=(180,393,606,1938,2151,2364,2577,2790), Center&end=(1074,1287,1500,1938,2151,2364,2577,2790).

(μ_1, \dots, μ_9)	$(\sigma_1, \dots, \sigma_9)$	(t_1, \dots, t_8)		The estimated number of change points					Total
				6	7	8	9	10+	
(1,-1,0,-1,2,1,2,0,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	0	999	1	0	1000
			JMIC($\alpha = 1/3$)	0	0	999	1	0	
			PMIC(C=1)	0	0	990	8	2	
			PMIC(C=10)	0	0	993	5	2	
			ZMIC	0	0	995	4	1	
			SIC	0	0	564	156	280	
		Front& center	JMIC($\alpha = 1/2$)	0	0	794	174	32	
			JMIC($\alpha = 1/3$)	0	0	794	174	32	
			PMIC(C=1)	0	0	783	175	42	
			PMIC(C=10)	0	0	785	173	42	
			ZMIC	0	0	785	173	42	
			SIC	0	0	224	202	574	
		Front&end	JMIC($\alpha = 1/2$)	0	0	786	188	26	
			JMIC($\alpha = 1/3$)	0	0	786	188	26	
			PMIC(C=1)	0	0	777	192	31	
			PMIC(C=10)	0	0	777	194	29	
			ZMIC	0	0	777	194	29	
			SIC	0	0	215	203	582	
		Center&end	JMIC($\alpha = 1/2$)	0	0	718	239	43	
			JMIC($\alpha = 1/3$)	0	0	718	239	43	
			PMIC(C=1)	0	0	712	245	43	
			PMIC(C=10)	0	0	712	245	43	
			ZMIC	0	0	714	243	43	
			SIC	0	0	229	223	548	

Supplemental Table 22: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 8$ and $n = 4500$. Evenly spaced=(500,1000,1500,2000,2500,3000,3500,4000), Front& center=(158,478,798,1890,2210,2530,2850,3170), Front&end=(270,590,910,2905,3225,3545,3865,4185), Center&end=(1610,1930,2250,2905,3225,3545,3865,4185).

			The estimated number of change points						
(μ_1, \dots, μ_9)	$(\sigma_1, \dots, \sigma_9)$	(t_1, \dots, t_8)		6	7	8	9	10+	Total
(1,-1,0,-1,2,1,2,0,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	0	1000	0	0	
			PMIC(C=1)	0	0	987	13	0	
			PMIC(C=10)	0	0	990	10	0	
			ZMIC	0	0	990	10	0	
			SIC	0	0	525	171	304	
		Front& center	JMIC($\alpha = 1/2$)	0	0	776	200	24	
			JMIC($\alpha = 1/3$)	0	0	775	201	24	
			PMIC(C=1)	0	0	770	203	27	
			PMIC(C=10)	0	0	770	203	27	
			ZMIC	0	0	770	203	27	
			SIC	0	0	247	188	565	
		Front&end	JMIC($\alpha = 1/2$)	0	0	776	198	26	
			JMIC($\alpha = 1/3$)	0	0	776	198	26	
			PMIC(C=1)	0	0	769	201	30	
			PMIC(C=10)	0	0	769	201	30	
			ZMIC	0	0	770	201	29	
			SIC	0	0	208	208	584	
		Center&end	JMIC($\alpha = 1/2$)	0	0	677	273	50	
			JMIC($\alpha = 1/3$)	0	0	677	273	50	
			PMIC(C=1)	0	0	671	276	53	
			PMIC(C=10)	0	0	674	274	52	
			ZMIC	0	0	675	273	52	
			SIC	0	0	196	266	538	

Supplemental Table 23: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 8$ and $n = 6000$. Evenly spaced=(667,1333,2000,2666,3332,4000,4666,5332), Front& center=(210,637,1064,2520,2947,3374,3801,4228), Front&end=(360,787,1214,3872,4299,4726,5153,5580), Center&end=(2146,2573,3000,3872,4299,4726,5153,5580).

(μ_1, \dots, μ_9)	$(\sigma_1, \dots, \sigma_9)$	(t_1, \dots, t_8)		The estimated number of change points					Total
				6	7	8	9	10+	
(1,-1,0,-1,2,1,2,0,1)	(0.1,...,0.1)	Evenly spaced	JMIC($\alpha = 1/2$)	0	0	1000	0	0	1000
			JMIC($\alpha = 1/3$)	0	0	1000	0	0	
			PMIC(C=1)	0	0	989	11	0	
			PMIC(C=10)	0	0	989	11	0	
			ZMIC	0	0	989	11	0	
			SIC	0	0	519	171	310	
		Front& center	JMIC($\alpha = 1/2$)	0	0	771	193	36	
			JMIC($\alpha = 1/3$)	0	0	771	193	36	
			PMIC(C=1)	0	0	764	194	42	
			PMIC(C=10)	0	0	764	194	42	
			ZMIC	0	0	766	194	40	
			SIC	0	0	240	170	590	
		Front&end	JMIC($\alpha = 1/2$)	0	0	777	197	26	
			JMIC($\alpha = 1/3$)	0	0	776	198	26	
			PMIC(C=1)	0	0	774	196	30	
			PMIC(C=10)	0	0	774	196	30	
			ZMIC	0	0	774	197	29	
			SIC	0	0	245	231	524	
		Center&end	JMIC($\alpha = 1/2$)	0	0	709	239	52	
			JMIC($\alpha = 1/3$)	0	0	709	239	52	
			PMIC(C=1)	0	0	704	244	52	
			PMIC(C=10)	0	0	704	244	52	
			ZMIC	0	0	704	244	52	
			SIC	0	0	243	245	512	

Supplemental Table 24: The frequencies of the number of change points \hat{K} estimated by the 1d fused LASSO with each criterion over 1000 simulations, when the true number of change points $K = 8$ and $n = 7500$. Evenly spaced=(834,1667,2500,3333,4166,5000,5833,6666), Front& center=(263,795,1328,3150,3683,4216,4749,5282), Front&end=(450,983,1516,4843,5376,5909,6442,6975), Center&end=(2684,3217,3750,4843,5376,5909,6442,6975).