

Table 1: DRPM Model for different hyperparameter configurations with the following prior values:  $m_0 = 0.0$ ,  $s_0^2 = 10000.0$ ,  $A_\sigma = 10.0$ ,  $A_\tau = 5.0$ ,  $A_\lambda = 5.0$ ,  $b = 1.0$ ,  $a_\alpha = 2.0$ ,  $b_\alpha = 2.0$ .

Model	M	starting-alpha	SpatialCohesion	lpml	waic	time	mse	n-singletons	n-clusters	max-cluster-size	min-cluster-size	max-pm25-diff
drpm	0.100000	0.000000	3	$-1.353 \cdot 10^{+03}$	$2.691 \cdot 10^{+03}$	$2.720 \cdot 10^{+01}$	$1.284 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.000000	4	$-1.574 \cdot 10^{+03}$	$3.115 \cdot 10^{+03}$	$3.532 \cdot 10^{+01}$	$1.346 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.100000	3	$-1.494 \cdot 10^{+03}$	$2.973 \cdot 10^{+03}$	$2.689 \cdot 10^{+01}$	$1.304 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.100000	4	$-1.803 \cdot 10^{+03}$	$3.576 \cdot 10^{+03}$	$3.528 \cdot 10^{+01}$	$1.391 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.250000	3	$-1.622 \cdot 10^{+03}$	$3.232 \cdot 10^{+03}$	$2.673 \cdot 10^{+01}$	$1.361 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.250000	4	$-1.668 \cdot 10^{+03}$	$3.312 \cdot 10^{+03}$	$3.067 \cdot 10^{+01}$	$1.403 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.500000	3	$-1.217 \cdot 10^{+03}$	$2.422 \cdot 10^{+03}$	$2.672 \cdot 10^{+01}$	$1.257 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.500000	4	$-1.509 \cdot 10^{+03}$	$2.988 \cdot 10^{+03}$	$3.235 \cdot 10^{+01}$	$1.348 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.750000	3	$-1.668 \cdot 10^{+03}$	$3.323 \cdot 10^{+03}$	$2.685 \cdot 10^{+01}$	$1.368 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.750000	4	$-1.703 \cdot 10^{+03}$	$3.384 \cdot 10^{+03}$	$3.044 \cdot 10^{+01}$	$1.377 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.900000	3	$-1.432 \cdot 10^{+03}$	$2.850 \cdot 10^{+03}$	$2.672 \cdot 10^{+01}$	$1.304 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	0.100000	0.900000	4	$-1.646 \cdot 10^{+03}$	$3.268 \cdot 10^{+03}$	$3.044 \cdot 10^{+01}$	$1.358 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.000000	3	$-1.707 \cdot 10^{+03}$	$3.403 \cdot 10^{+03}$	$2.679 \cdot 10^{+01}$	$1.391 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.000000	4	$-1.326 \cdot 10^{+03}$	$2.606 \cdot 10^{+03}$	$4.512 \cdot 10^{+01}$	$1.260 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.100000	3	$-1.732 \cdot 10^{+03}$	$3.453 \cdot 10^{+03}$	$2.708 \cdot 10^{+01}$	$1.398 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.100000	4	$-1.783 \cdot 10^{+03}$	$3.525 \cdot 10^{+03}$	$4.327 \cdot 10^{+01}$	$1.418 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.250000	3	$-1.732 \cdot 10^{+03}$	$3.451 \cdot 10^{+03}$	$2.703 \cdot 10^{+01}$	$1.379 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.250000	4	$-1.762 \cdot 10^{+03}$	$3.484 \cdot 10^{+03}$	$4.219 \cdot 10^{+01}$	$1.376 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.500000	3	$-1.421 \cdot 10^{+03}$	$2.827 \cdot 10^{+03}$	$2.741 \cdot 10^{+01}$	$1.320 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.500000	4	$-1.297 \cdot 10^{+03}$	$2.552 \cdot 10^{+03}$	$4.370 \cdot 10^{+01}$	$1.260 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.750000	3	$-1.889 \cdot 10^{+03}$	$3.767 \cdot 10^{+03}$	$2.684 \cdot 10^{+01}$	$1.430 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.750000	4	$-1.548 \cdot 10^{+03}$	$3.048 \cdot 10^{+03}$	$4.109 \cdot 10^{+01}$	$1.304 \cdot 10^{+00}$	0	1.019231	34	5	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.900000	3	$-1.312 \cdot 10^{+03}$	$2.611 \cdot 10^{+03}$	$2.682 \cdot 10^{+01}$	$1.279 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	1.000000	0.900000	4	$-1.342 \cdot 10^{+03}$	$2.642 \cdot 10^{+03}$	$4.009 \cdot 10^{+01}$	$1.269 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.000000	3	$-1.237 \cdot 10^{+03}$	$2.461 \cdot 10^{+03}$	$2.672 \cdot 10^{+01}$	$1.268 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.000000	4	$-1.861 \cdot 10^{+03}$	$3.683 \cdot 10^{+03}$	$4.514 \cdot 10^{+01}$	$1.440 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.100000	3	$-1.436 \cdot 10^{+03}$	$2.857 \cdot 10^{+03}$	$2.808 \cdot 10^{+01}$	$1.312 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.100000	4	$-1.329 \cdot 10^{+03}$	$2.611 \cdot 10^{+03}$	$4.479 \cdot 10^{+01}$	$1.253 \cdot 10^{+00}$	0	1.019231	34	2	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.250000	3	$-1.583 \cdot 10^{+03}$	$3.153 \cdot 10^{+03}$	$2.689 \cdot 10^{+01}$	$1.358 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.250000	4	$-2.121 \cdot 10^{+03}$	$3.935 \cdot 10^{+03}$	$4.508 \cdot 10^{+01}$	$1.487 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.500000	3	$-1.349 \cdot 10^{+03}$	$2.683 \cdot 10^{+03}$	$2.693 \cdot 10^{+01}$	$1.278 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.500000	4	$-1.548 \cdot 10^{+03}$	$3.024 \cdot 10^{+03}$	$4.166 \cdot 10^{+01}$	$1.325 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.750000	3	$-1.330 \cdot 10^{+03}$	$2.646 \cdot 10^{+03}$	$2.676 \cdot 10^{+01}$	$1.262 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.750000	4	$-1.465 \cdot 10^{+03}$	$2.887 \cdot 10^{+03}$	$3.472 \cdot 10^{+01}$	$1.306 \cdot 10^{+00}$	1	1.057692	34	1	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.900000	3	$-1.620 \cdot 10^{+03}$	$3.225 \cdot 10^{+03}$	$2.791 \cdot 10^{+01}$	$1.360 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	10.000000	0.900000	4	$-1.593 \cdot 10^{+03}$	$3.133 \cdot 10^{+03}$	$4.081 \cdot 10^{+01}$	$1.333 \cdot 10^{+00}$	0	1.019231	34	4	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.000000	3	$-1.405 \cdot 10^{+03}$	$2.790 \cdot 10^{+03}$	$3.020 \cdot 10^{+01}$	$1.288 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.000000	4	$-1.613 \cdot 10^{+03}$	$3.093 \cdot 10^{+03}$	$4.160 \cdot 10^{+01}$	$1.325 \cdot 10^{+00}$	0	1.076923	34	2	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.100000	3	$-1.718 \cdot 10^{+03}$	$3.421 \cdot 10^{+03}$	$2.795 \cdot 10^{+01}$	$1.398 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.100000	4	$-1.379 \cdot 10^{+03}$	$2.692 \cdot 10^{+03}$	$4.102 \cdot 10^{+01}$	$1.258 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.250000	3	$-1.506 \cdot 10^{+03}$	$2.997 \cdot 10^{+03}$	$2.712 \cdot 10^{+01}$	$1.329 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.250000	4	<i>nan</i>	$3.033 \cdot 10^{+03}$	$2.733 \cdot 10^{+01}$	$1.293 \cdot 10^{+00}$	1	1.192308	34	1	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.500000	3	$-1.911 \cdot 10^{+03}$	$3.757 \cdot 10^{+03}$	$2.963 \cdot 10^{+01}$	$1.428 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.500000	4	$-2.357 \cdot 10^{+03}$	$3.711 \cdot 10^{+03}$	$2.706 \cdot 10^{+01}$	$1.457 \cdot 10^{+00}$	1	1.057692	34	1	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.750000	3	$-1.251 \cdot 10^{+03}$	$2.485 \cdot 10^{+03}$	$2.828 \cdot 10^{+01}$	<b><math>1.251 \cdot 10^{+00}</math></b>	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.750000	4	$-1.335 \cdot 10^{+03}$	$2.639 \cdot 10^{+03}$	<b><math>2.437 \cdot 10^{+01}</math></b>	$1.261 \cdot 10^{+00}$	1	1.076923	34	1	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.900000	3	$-1.221 \cdot 10^{+03}$	$2.427 \cdot 10^{+03}$	$2.741 \cdot 10^{+01}$	$1.268 \cdot 10^{+00}$	0	1.000000	34	34	$1.753 \cdot 10^{+00}$
drpm	100.000000	0.900000	4	$-2.191 \cdot 10^{+03}$	$3.947 \cdot 10^{+03}$	$3.478 \cdot 10^{+01}$	$1.486 \cdot 10^{+00}$	1	1.115385	34	1	$1.753 \cdot 10^{+00}$