

KL Divergence Summary

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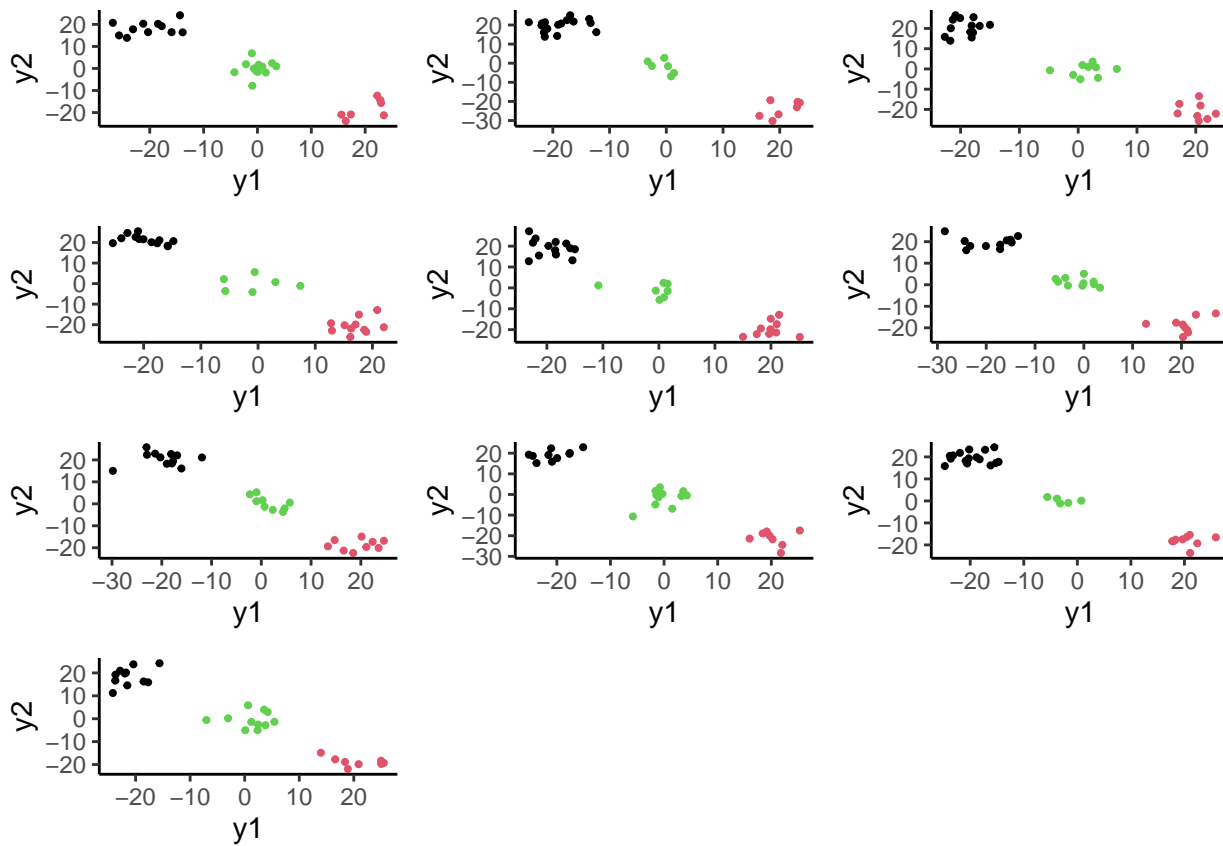
$$D_{KL}(p||q) = \sum_{x \in \mathcal{X}} p(x) \log \left(\frac{p(x)}{q(x)} \right)$$

for densities p and q with support \mathcal{X} , where p is the true density and q is the estimated density.

Well separated case

Simulated data sets

Mixture of 3 multivariate normal densities all with diagonal variance structure and $\sigma^2 = 10$. The true means are $(-20, 20)$, $(20, -20)$, and $(0, 0)$, and $\sum_j n_j = 30$.



Results

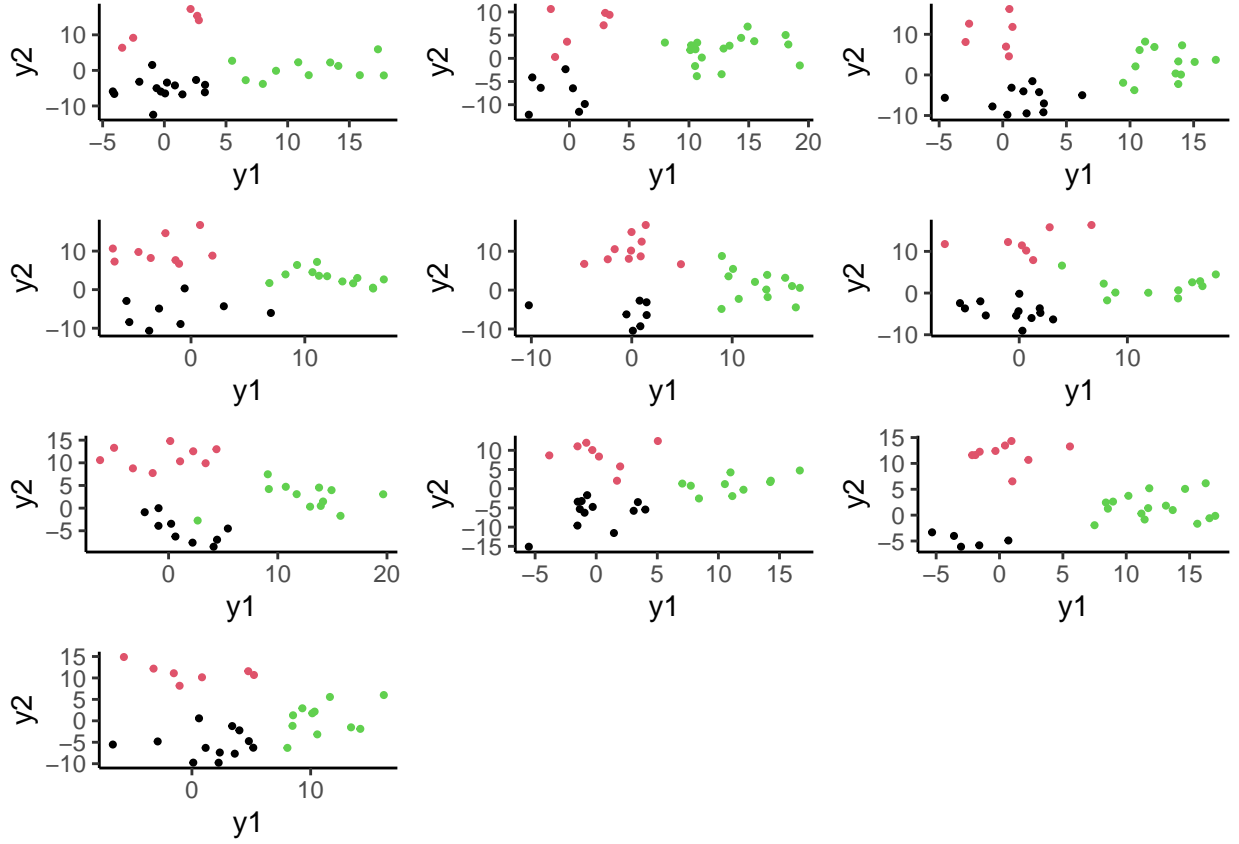
Table 1: KL divergence averaged across 10 simulated data sets for the well-separated case with $n=30$ observations

	DEE	DEV	UVV
no SM	0.186	0.074	0.073
with SM	0.169	0.069	0.076

Close together case

Simulated data sets

Mixture of 3 multivariate normal densities all with diagonal variance structure and $\sigma^2 = 10$. The true means are $(10, 10)$, $(0, -5)$, $(12, -2)$, and $(0, 10)$, and $\sum_j n_j = 50$.



Results

Table 2: KL divergence averaged across 10 simulated data sets for the closer case with n=30 observations

	DEE	DEV	UVV
no SM	0.259	0.096	0.103
with SM	1.869	0.153	0.106