

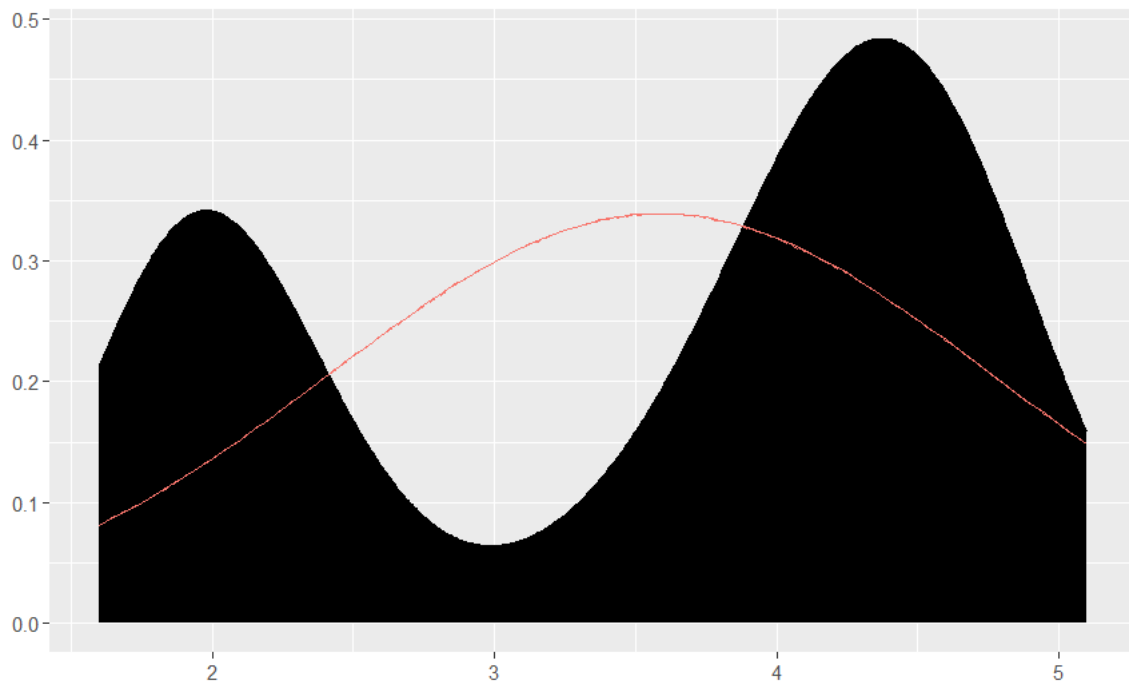
# Improving the performance of multivariate normal models in `dirichletprocess`

Easy Test: Download the package, fit the normal mixture model to the faithful data set. Fit the multivariate normal model on the *iris* or *palmerpenguin* dataset. Plot the resulting distribution for both models.

**Faithful Dataset:**

```
data("faithful")
erup_times <- faithful$eruptions
dp_faithful <- DirichletProcessGaussian(erup_times)
dp_faithful <- Fit(dp_faithful, 200)
plot(dp_faithful)
```

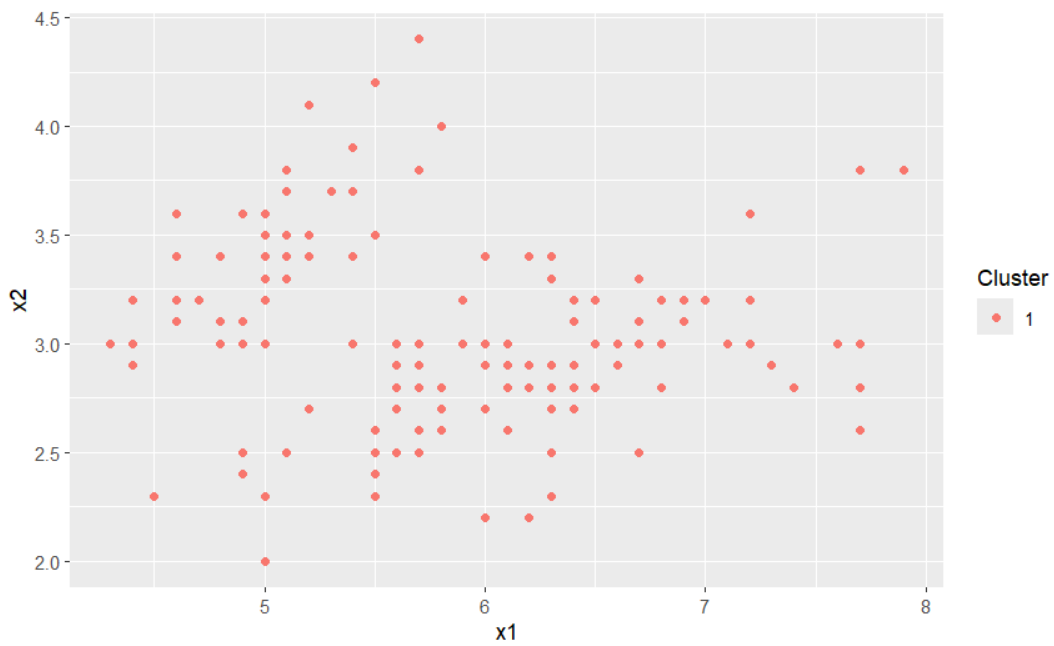
Plot:



## Iris Dataset:

```
iris_data <- iris[, c("Sepal.Length", "Sepal.Width")]  
dp_iris <- DirichletProcessMvnormal(as.matrix(iris_data))  
dp_iris <- Fit(dp_iris, 200)  
plot(dp_iris)
```

## Plot:



## Penguin Dataset:

```
penguin_data <- na.omit(penguins[, c("bill_length_mm", "bill_depth_mm")])  
dp_penguins <- DirichletProcessMvnormal(as.matrix(penguin_data))  
dp_penguins <- Fit(dp_penguins, 200)  
plot(dp_penguin)
```

**Note:** In the first line, we have used `na.omit` because DPMMs do not handle NA values directly

