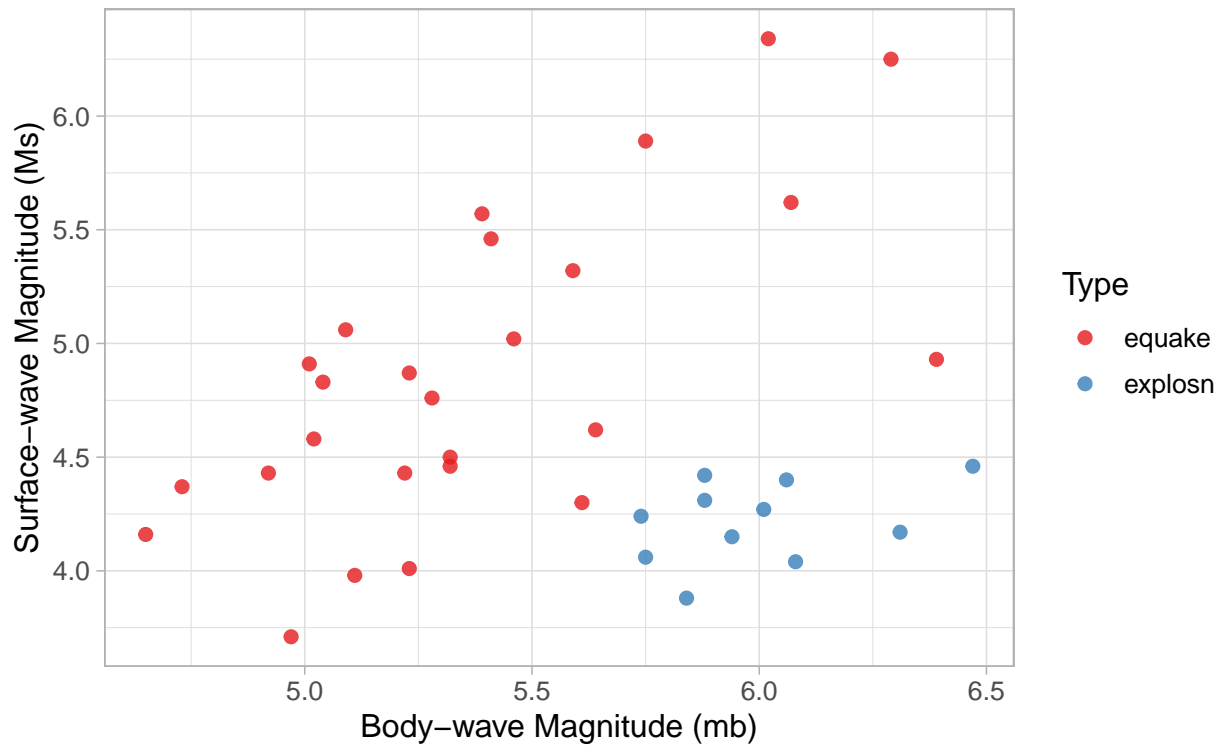# Report_10883408

10883408

2024-04-08

ML part A

Body−wave Magnitude vs. Surface−wave Magnitude
Comparing earthquake types

Box Plot with Jitter of Body−Wave Magnitude by Type

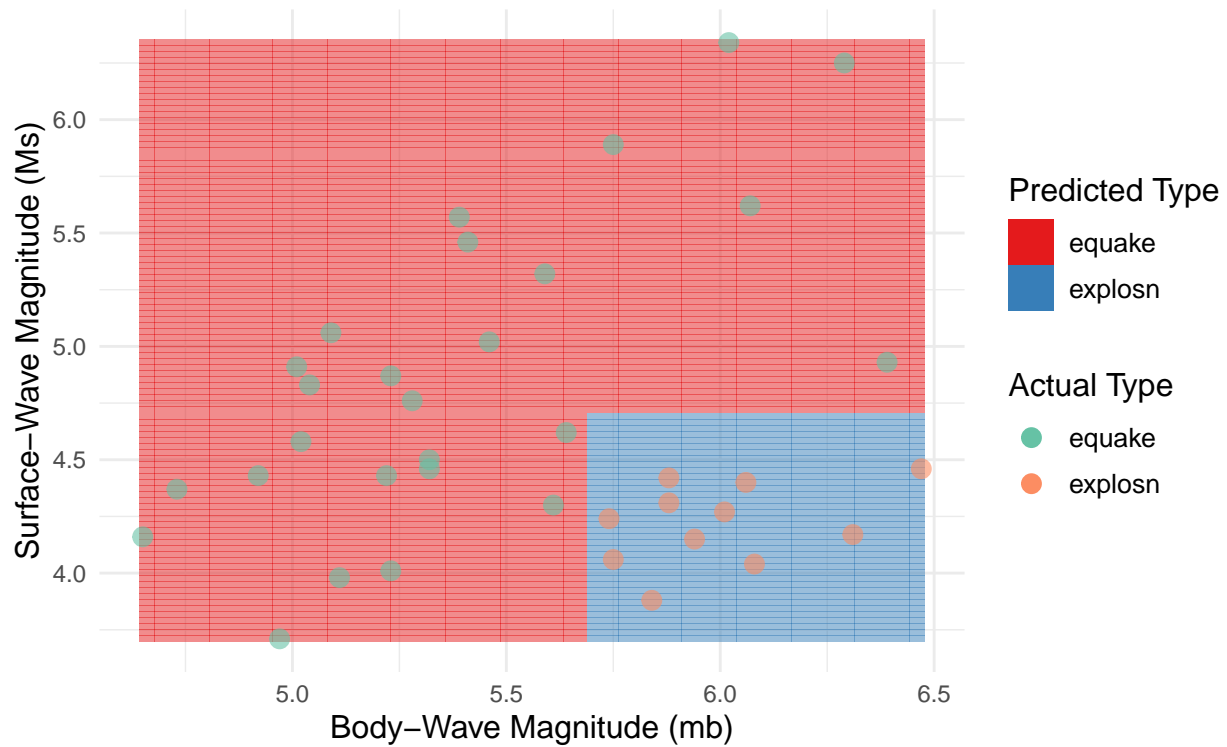Box Plot with Jitter of Surface−Wave Magnitude by Type
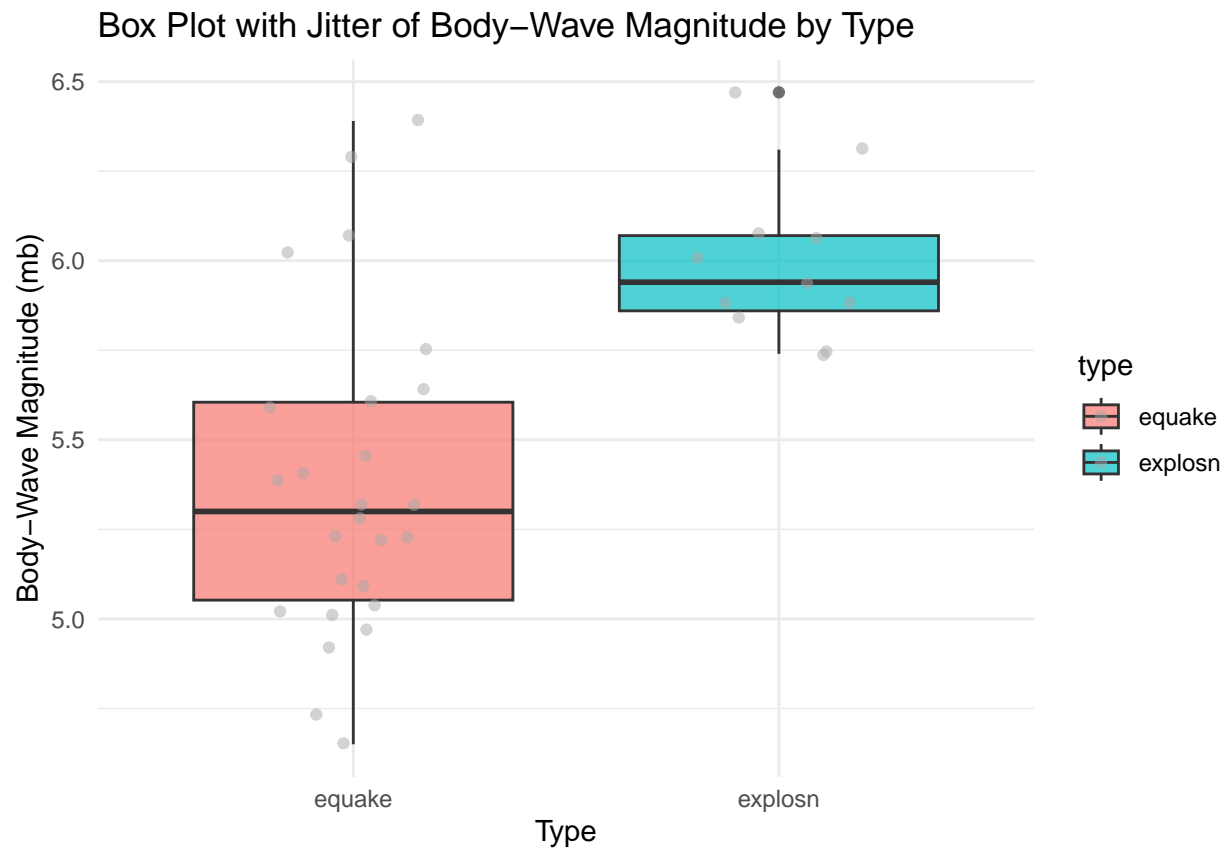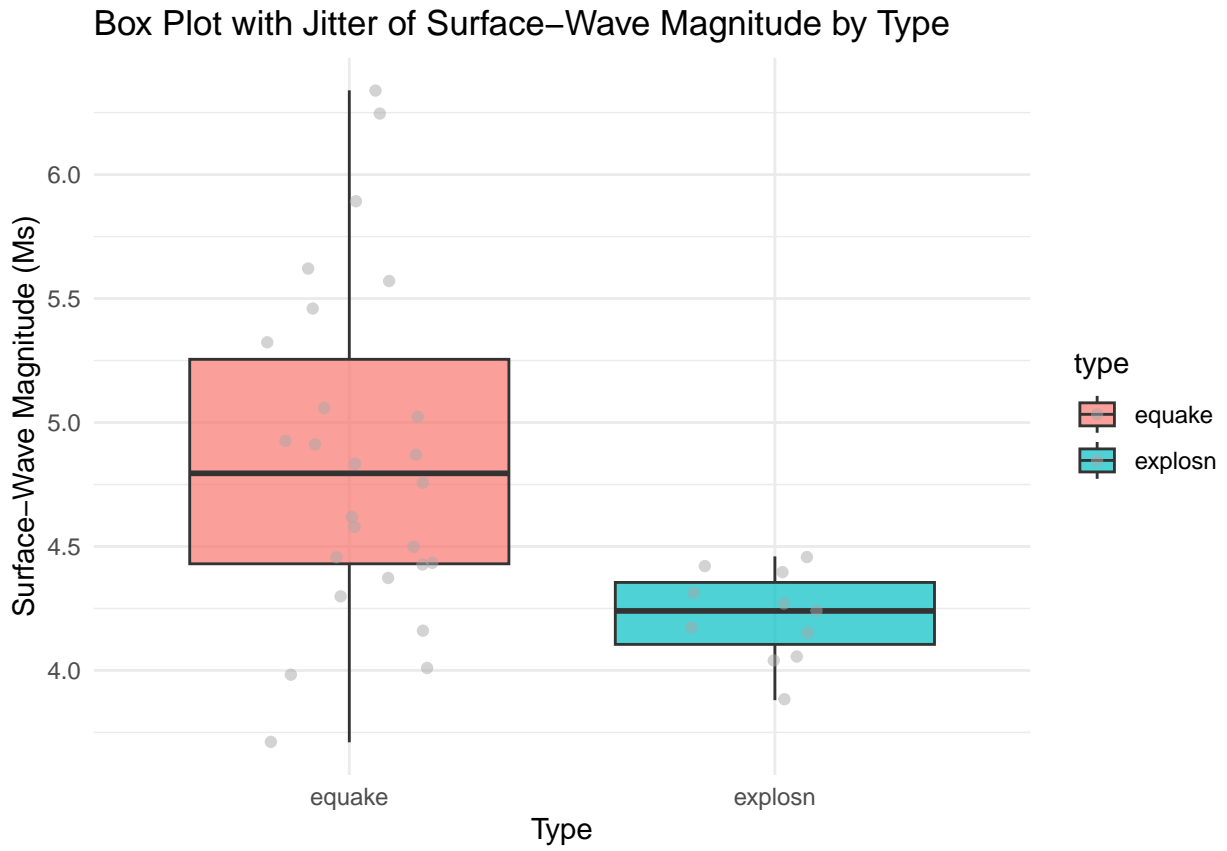
ML part B

Earthquake vs. Nuclear Explosion Prediction
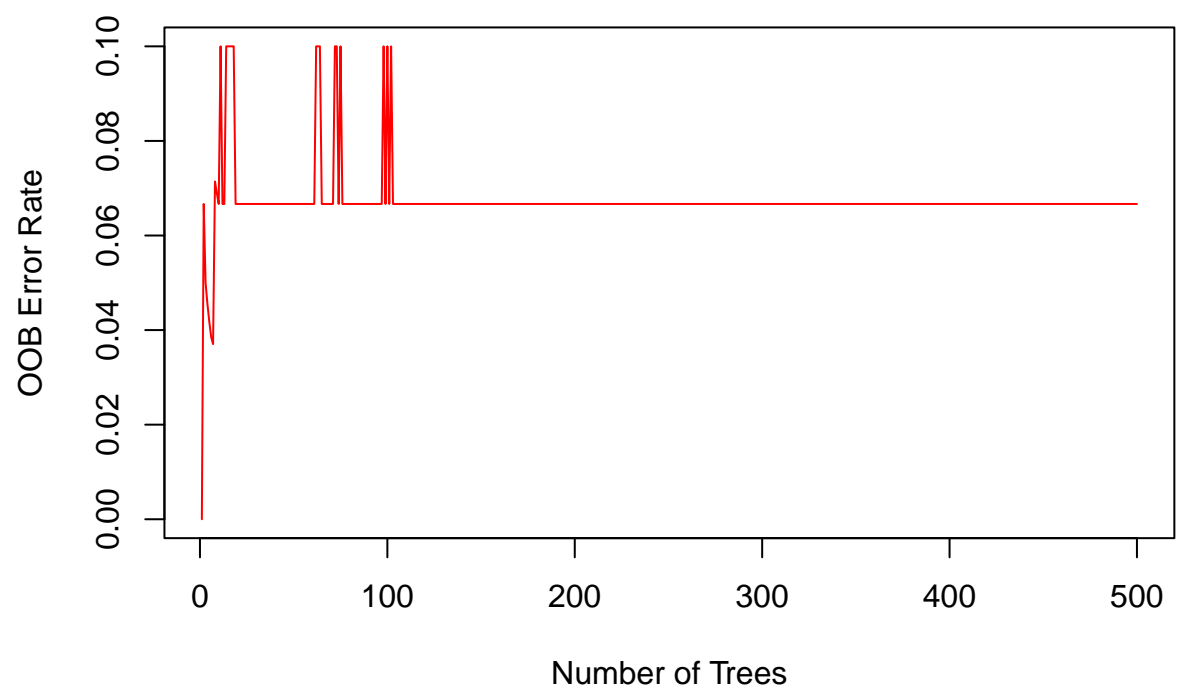
Random Forest Model Predictions vs. Actual Data
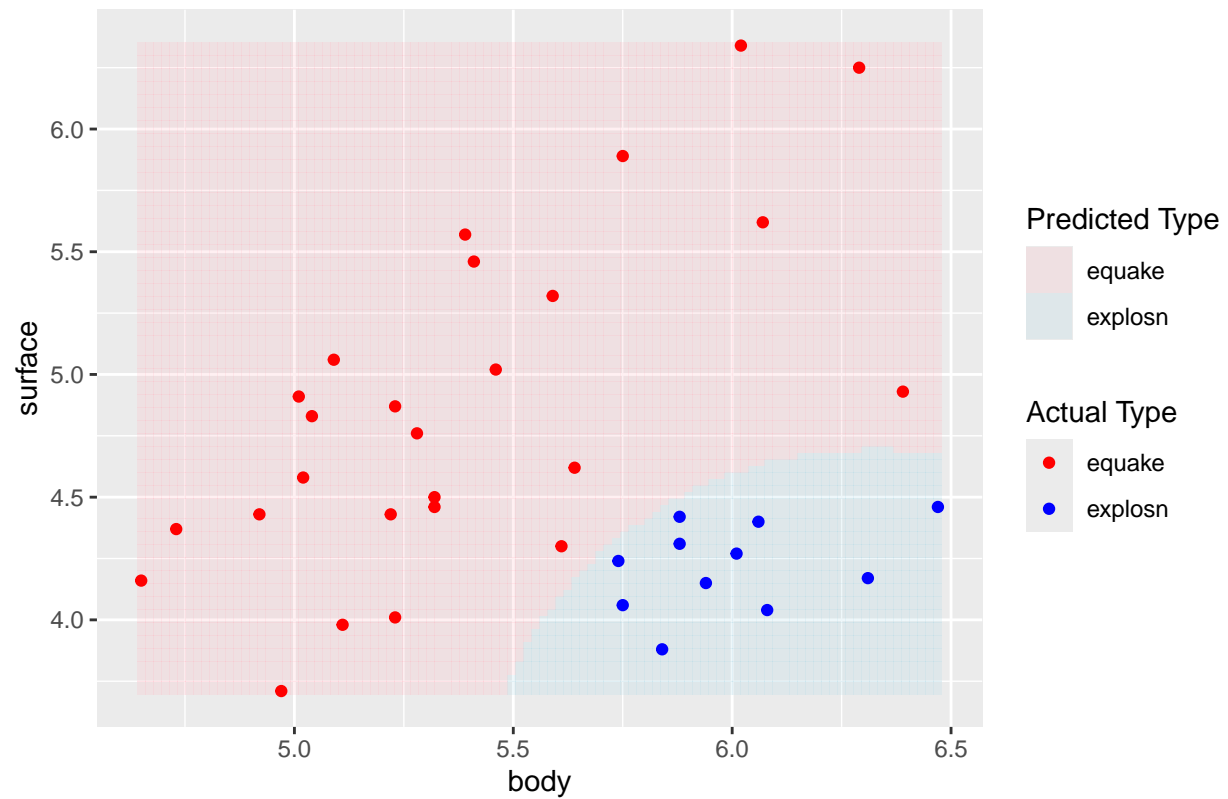

error rate

```r
# Extract the Random Forest model from the caret object
rf <- rfModel$finalModel

# Error rate plot
plot(rf$err.rate[, "OOB"], type = "l", col = "red",
     xlab = "Number of Trees",
     ylab = "OOB Error Rate",
     main = "OOB Error Rate vs. Number of Trees")
```
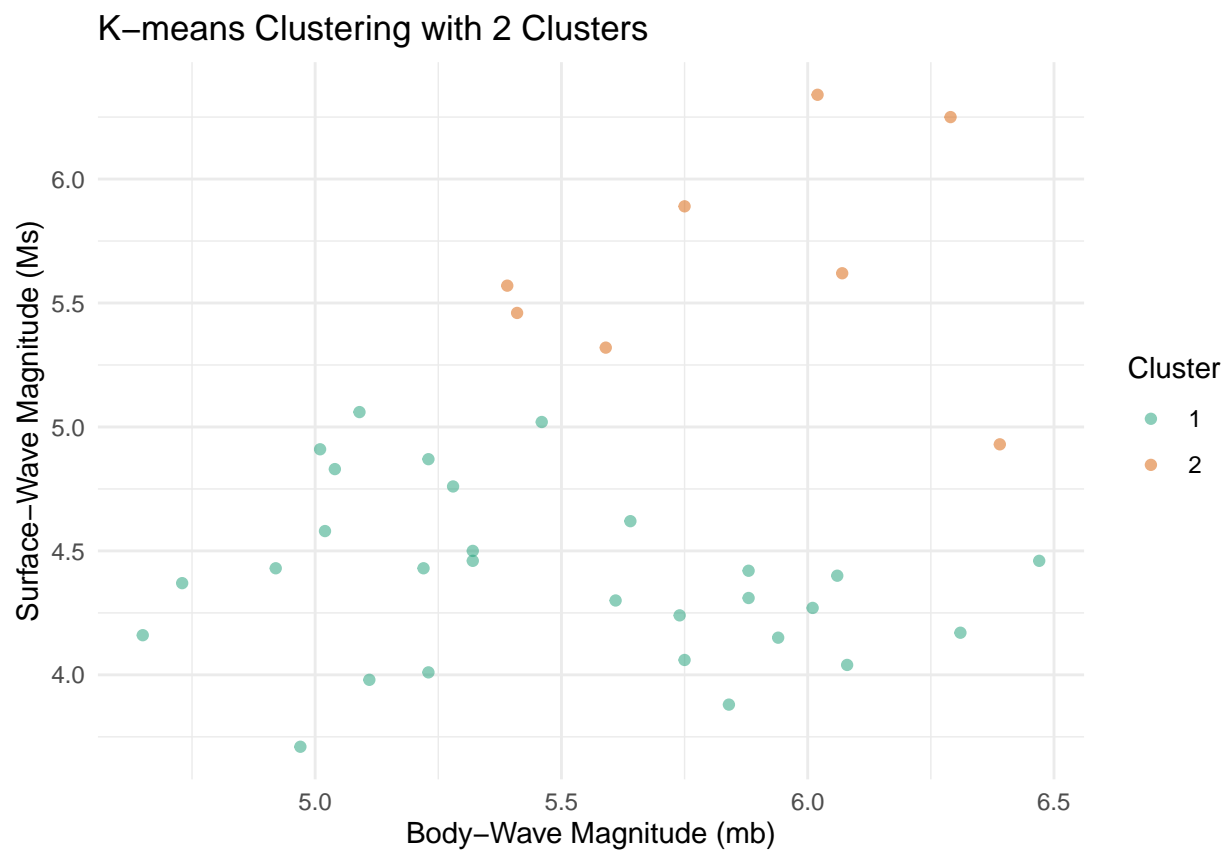
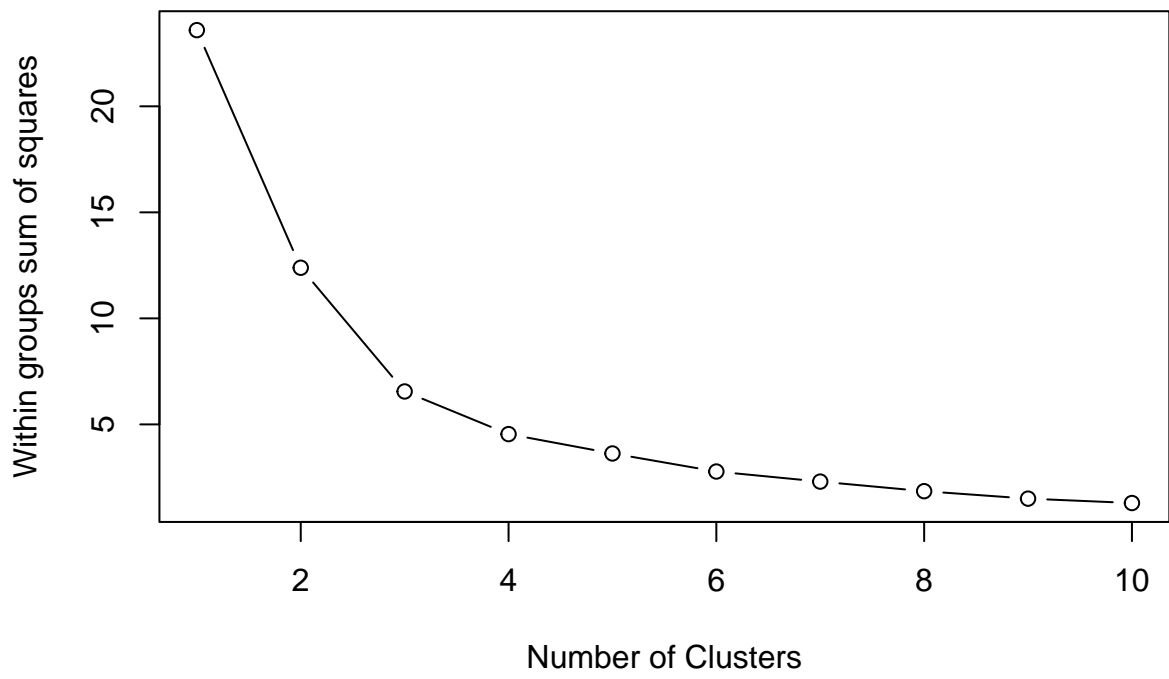**OOB Error Rate vs. Number of Trees**

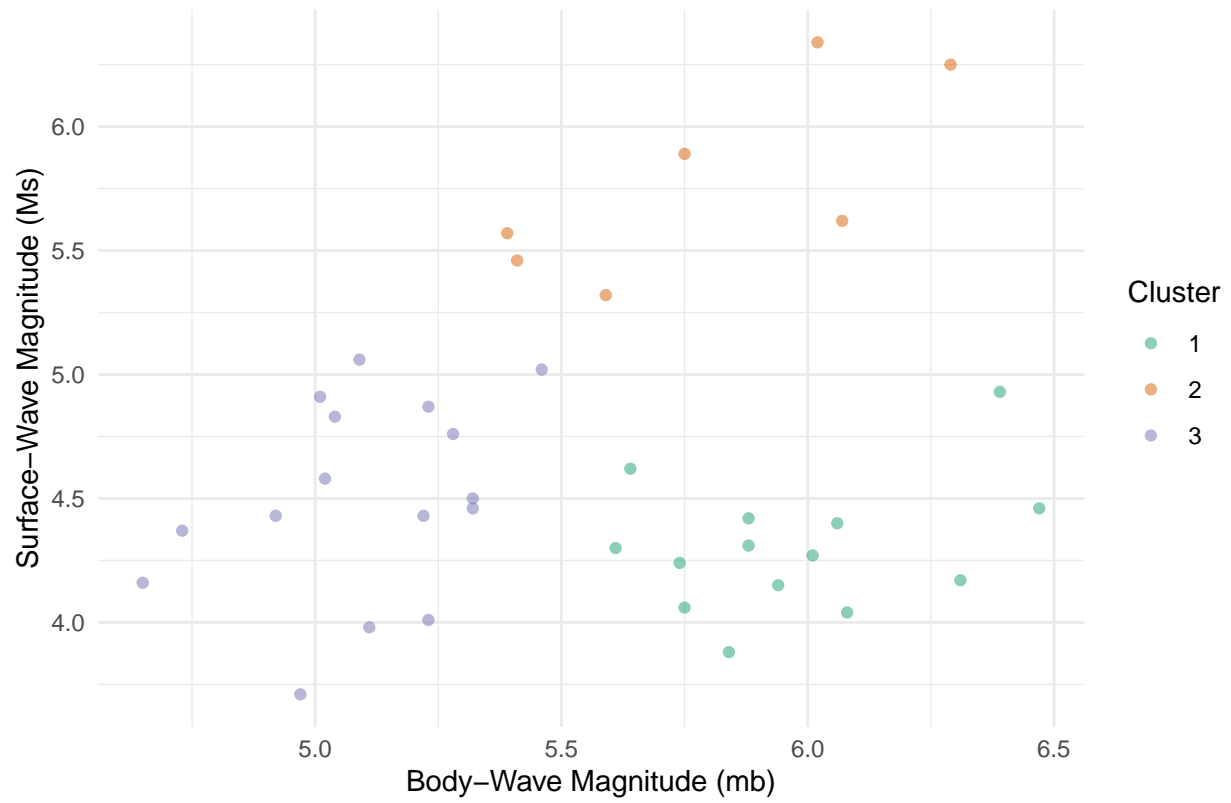SVM Classification of Earthquake and Nuclear Explosions

```
##   sigma   C
## 8   0.1 100
```

Part D

K−means Clustering with 2 Clusters

K−means Clustering with 3 Clusters

K−means Clustering with 4 Clusters