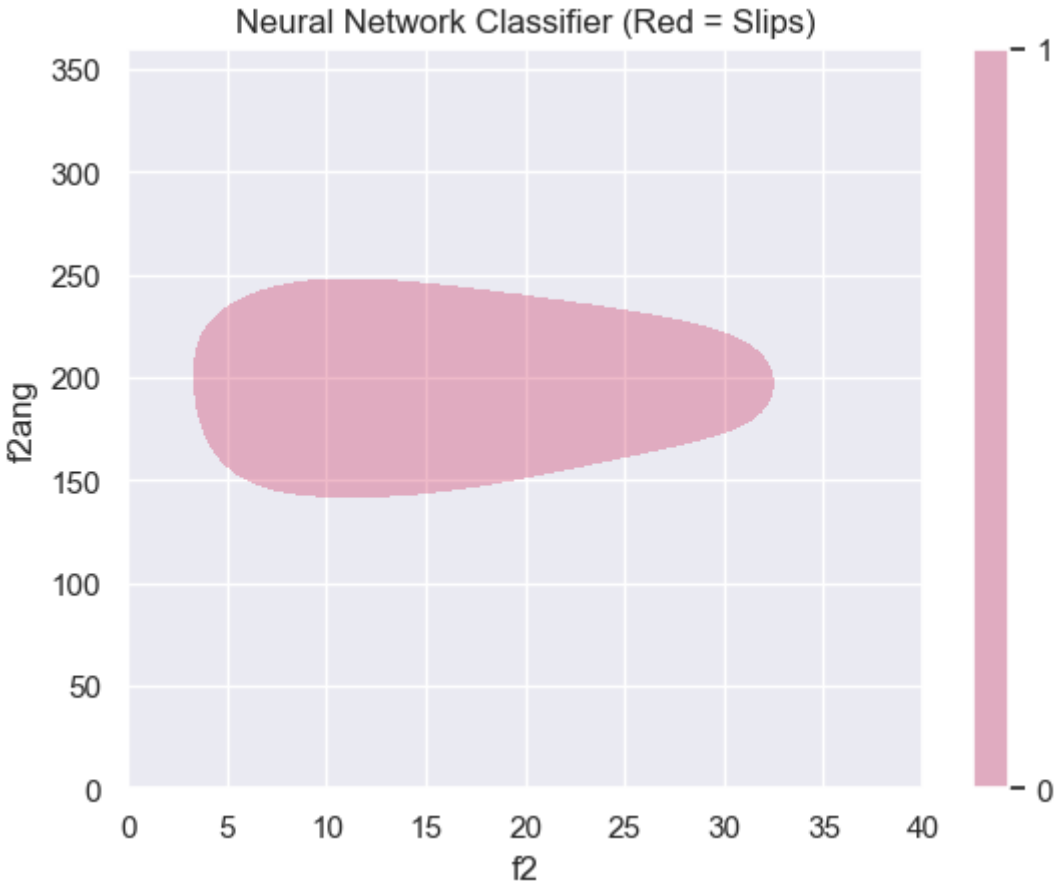
ae1220

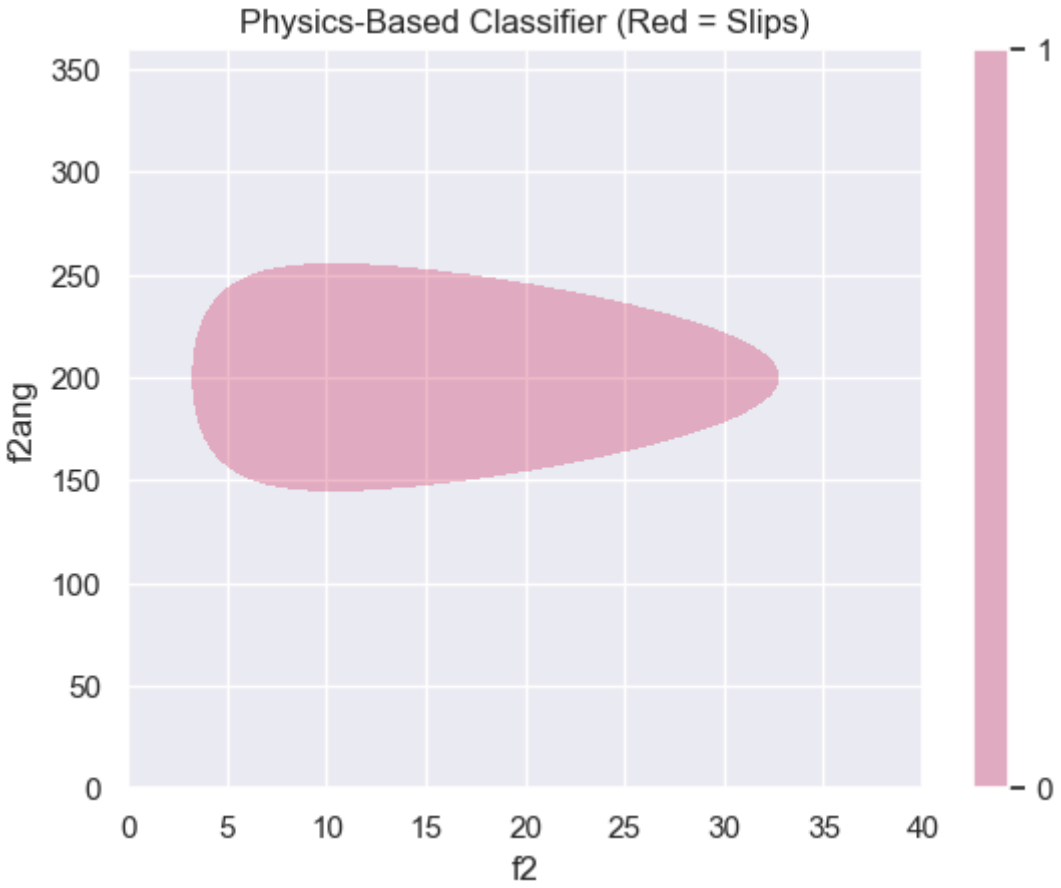
A)



B)

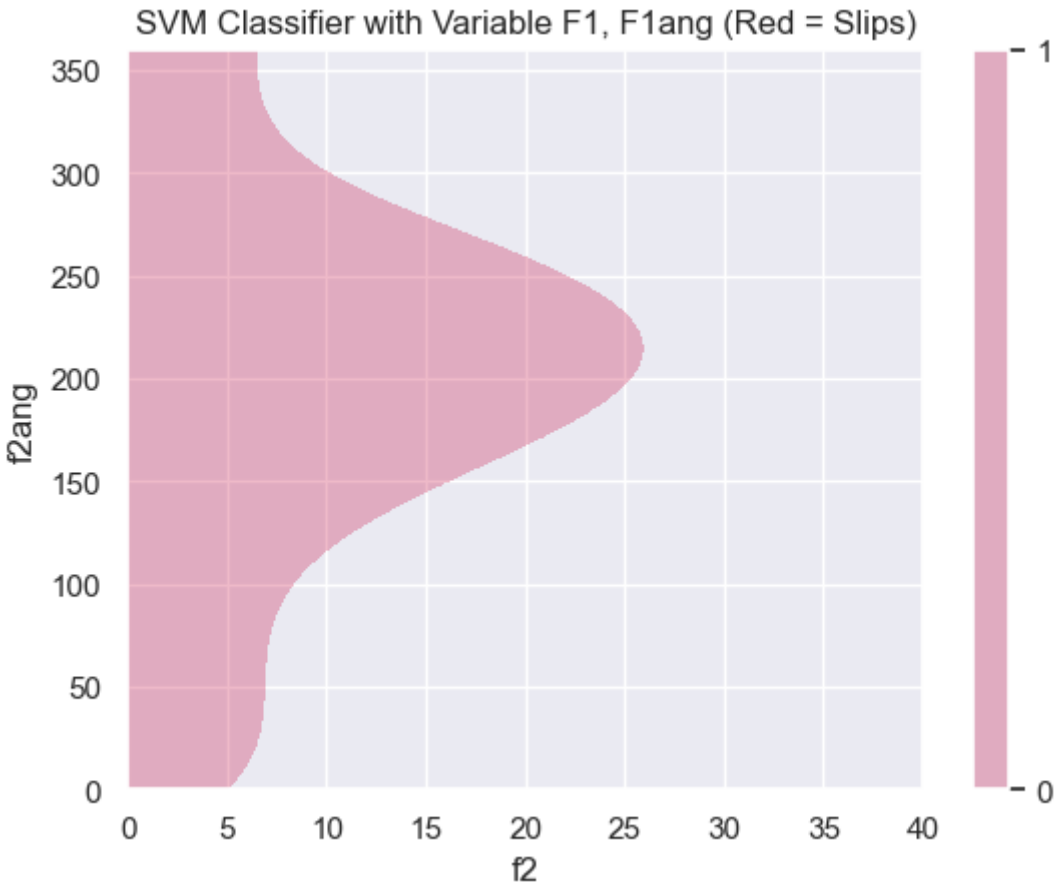
1. A Neural Network was chosen as I expected a non-linear decision boundary which they excel at identifying in comparison to SVMs.
2. Machine learning can encapsulate confounding variables which physical equations may neglect or be difficult to model with.
3. This system has a fairly simple analytical solution – the extra computation ML introduces is not only expensive but less accurate.

C)



The physics agrees with the ML approach (slight asymmetries aside) suggesting that the problem has been well modelled

D)



E) The dataset has more non-linear relationships that need to be captured due to the introduction of two additional varying parameters.