

# BFF

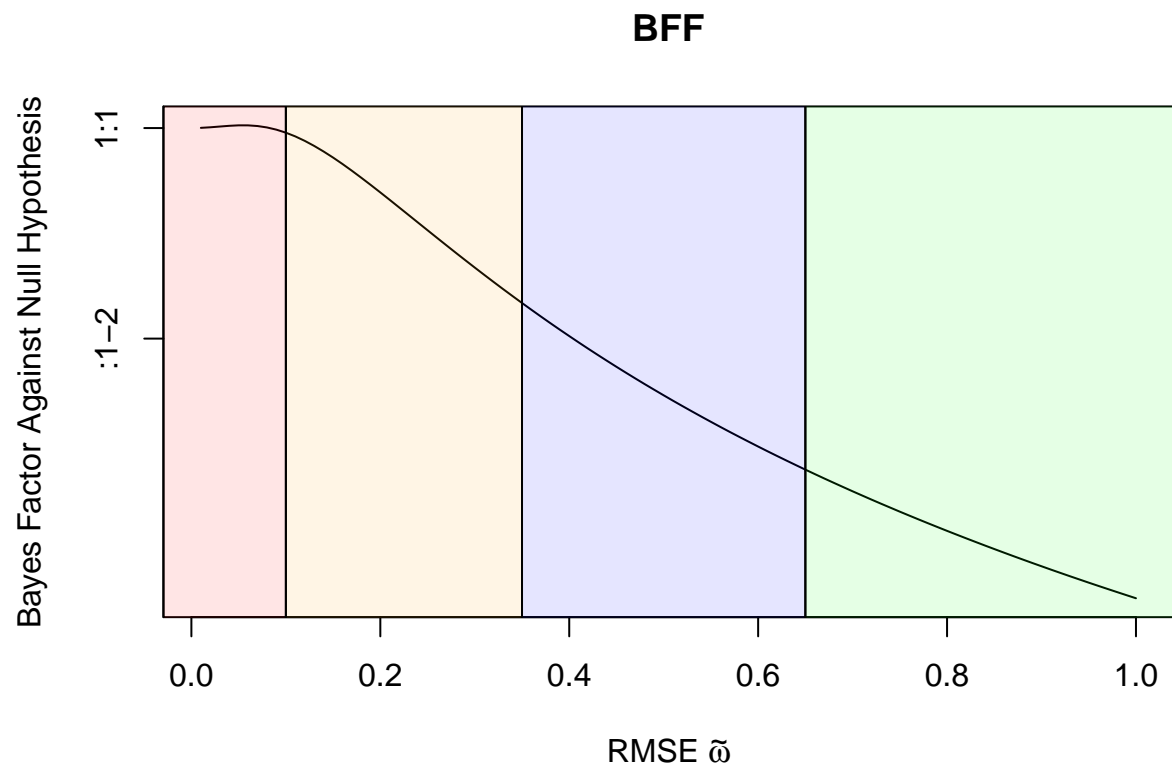
```
## Package 'BFF' version 2.7.0 for Bayesian hypothesis testing.  
## Type 'citation("BFF")' for citing this R package in publications  
  
## Loading required package: lattice  
  
##  
## Attaching package: 'BSDA'  
  
## The following object is masked from 'package:datasets':  
##  
##      Orange
```

The following examples will show how the BFF package calculates Bayes factors based on test statistics

z - test

```
# generate some data  
n = 100  
data_one = rnorm(n = n, mean = 0.2, sd = 1)  
data_two = rnorm(n = n, mean = 0.1, sd = 1)  
  
# calculate a test statistic  
z_score_one = z.test(x = data_one, sigma.x = 1)$statistic  
z_score_two = z.test(x = data_one, y = data_two, sigma.x = 1, sigma.y = 1)$statistic  
  
# calculate a BFF  
z_BFF_one = z.test.BFF(z_stat = z_score_one, n = 100)
```

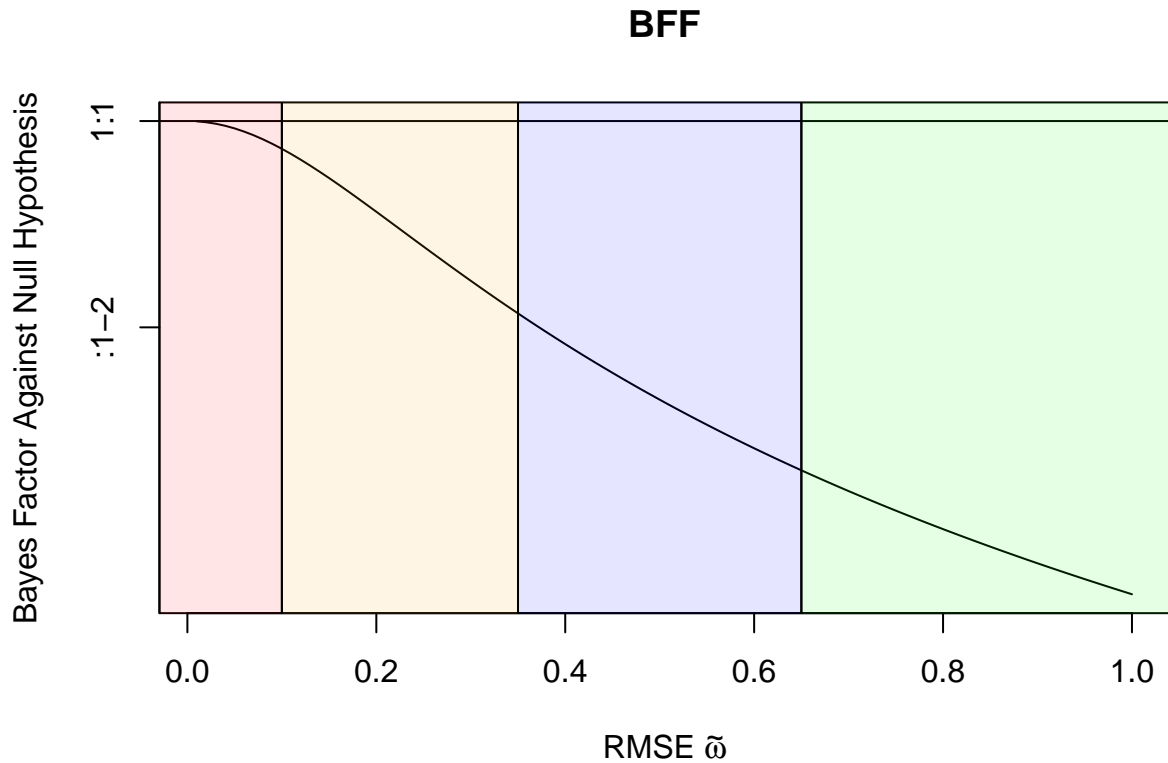
```
## [1] "No savename argument given, plot saving as BFF_plot.pdf"
```



```
## [1] "Will fix this with ggplot2"
```

```
z_BFF_two = z.test.BFF(z_stat = z_score_two, one_sample = FALSE, n1 = 100, n2 = 100)
```

```
## [1] "No savename argument given, plot saving as BFF_plot.pdf"
```



```
## [1] "Will fix this with ggplot2"
```

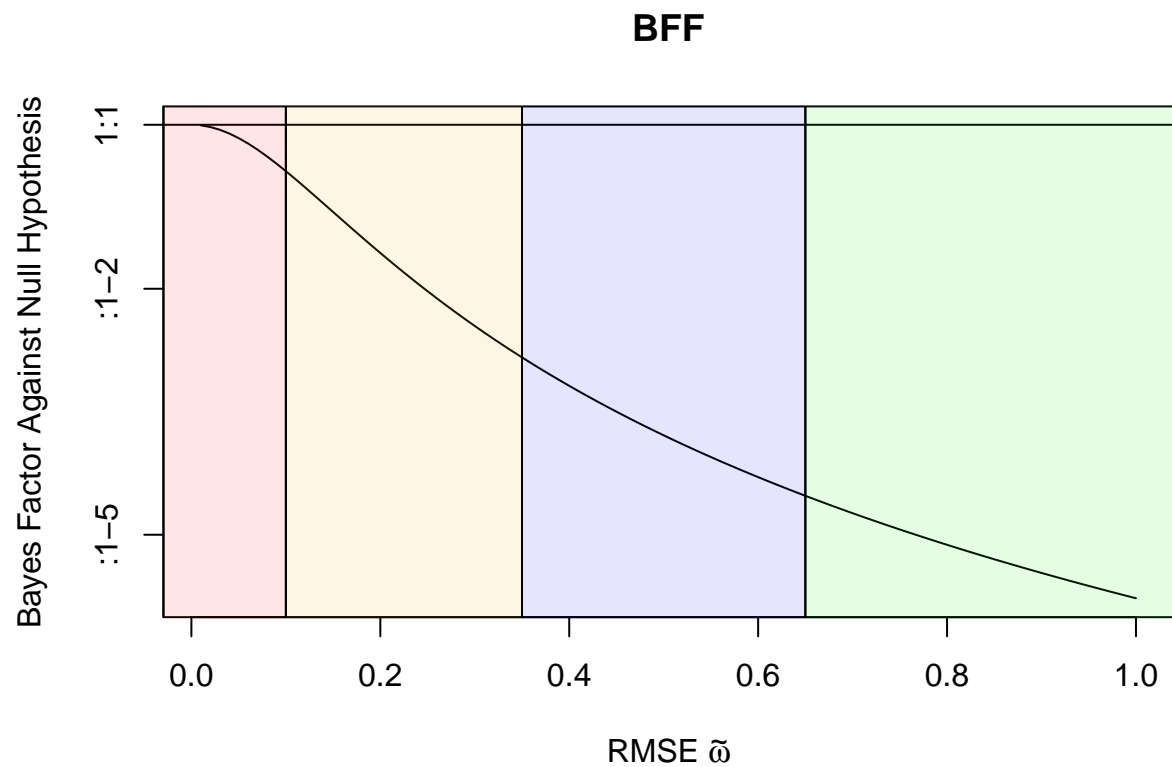
t - test

```
# generate some data
n = 100
data_one = rnorm(n = n, mean = -0.1)
data_two = rnorm(n = n, mean = 0.1)

# calculate a test st
t_one = t.test(x = data_one)
t_two = t.test(x = data_one, y = data_two)
t_score_one = t_one$statistic
t_score_two = t_two$statistic
t_df_one = n - 1
t_df_two = 197.9

# calculate a BFF
t_BFF_one = t.test.BFF(t_stat = t_score_one, df = t_df_one, n = 100)
```

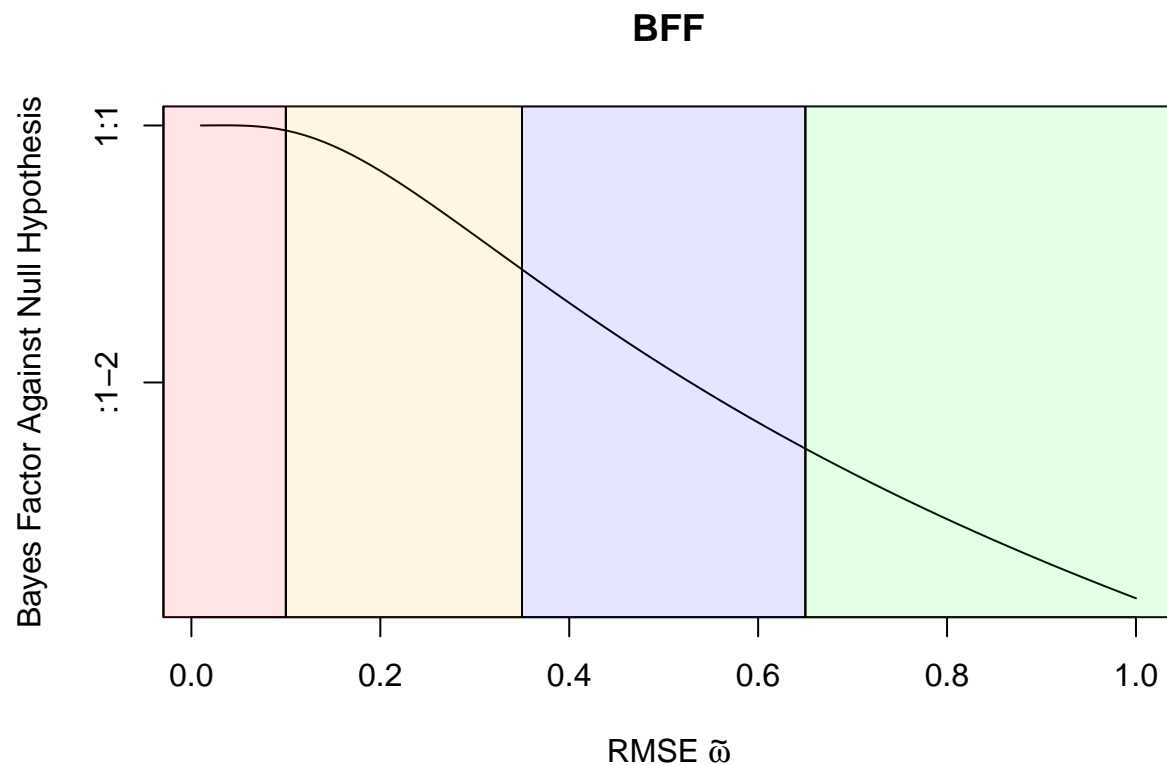
```
## [1] "No savename argument given, plot saving as BFF_plot.pdf"
```



```
## [1] "Will fix this with ggplot2"
```

```
t_BFF_two = t.test.BFF(t_stat = t_score_two, df = t_df_two, one_sample = FALSE, n1 = 100, n2 = 100)
```

```
## [1] "No savename argument given, plot saving as BFF_plot.pdf"
```



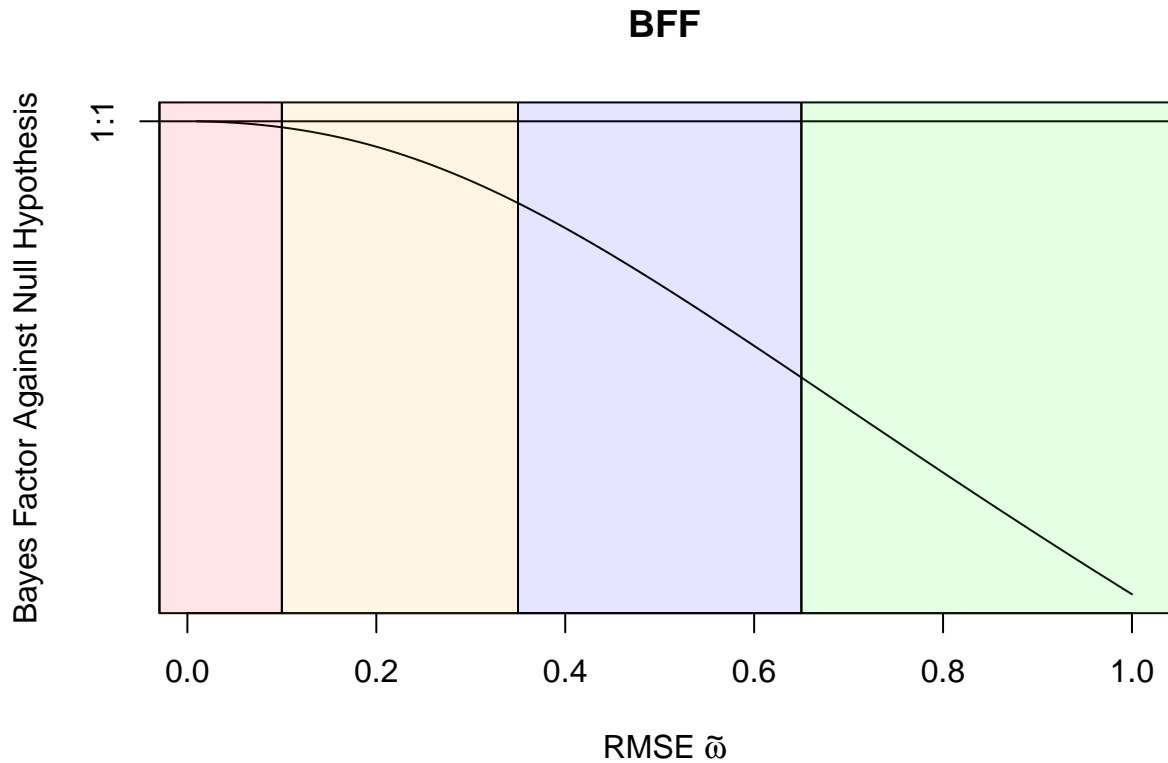
```
## [1] "Will fix this with ggplot2"
```

**chi<sup>2</sup> - test**

```
# generate some data - take from chisq.test example
x <- matrix(c(12, 5, 7, 7), ncol = 2)
chi2_stat = chisq.test(x)$statistic

# calculate a BFF
chi2_BFF_one = chi2.test.BFF(chi2_stat = chi2_stat, df = 1, n = 4)
```

```
## [1] "No savename argument given, plot saving as BFF_plot.pdf"
```



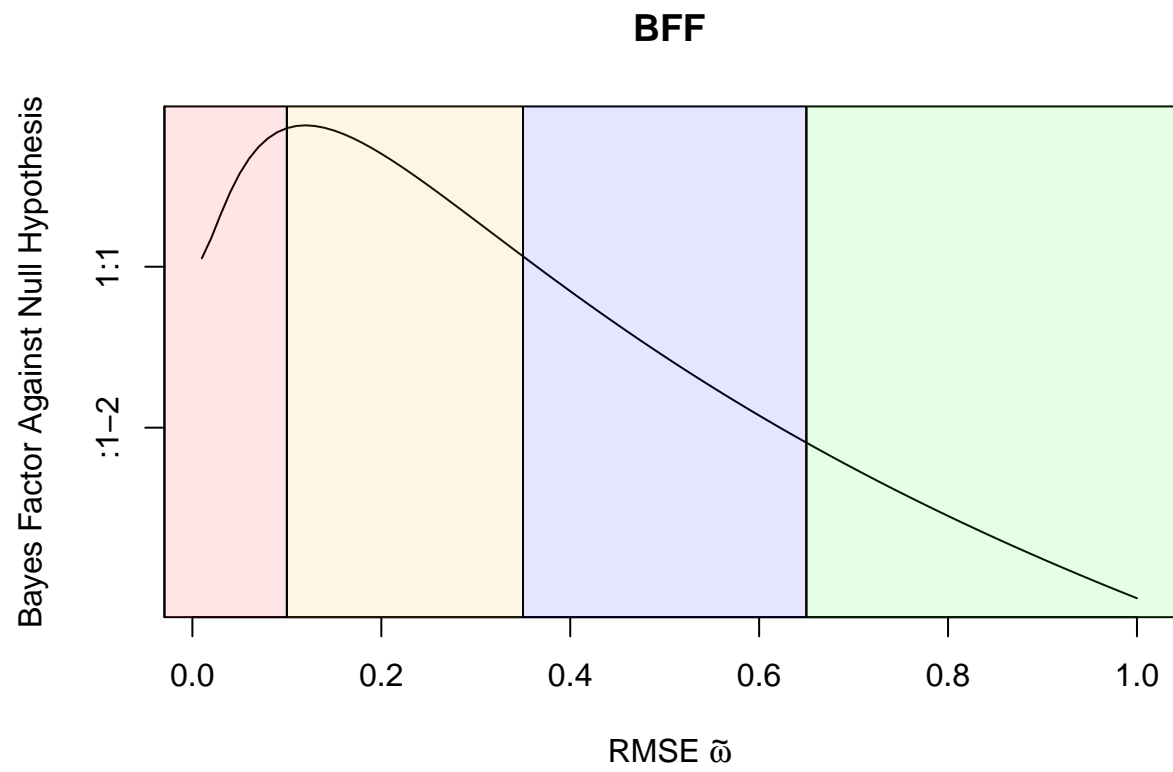
```
## [1] "Will fix this with ggplot2"
```

## F - test

```
# generate some data
n = 100
p = 3
X = matrix(rnorm(n*p), nrow = n)
beta = c(1,1,0)
y = X %*% beta + rnorm(n)
model1 = lm(y ~ X)
anova_model = anova(model1)
F_stat = anova_model$`F value`[1]

# calculate a BFF
F_BFF_one = f.test.BFF(f_stat = F_stat, df1 = anova_model$Df[1], df2 = anova_model$Df[2], n = n)
```

```
## [1] "No savename argument given, plot saving as BFF_plot.pdf"
```



```
## [1] "Will fix this with ggplot2"
```