Debug

```
library(dplyr)
library(ggplot2)
library(tidyr)

load("~/GitHub/soccer-live-predictions/soccer-live-predictions/scrape/data/goals.RData")
load("~/GitHub/soccer-live-predictions/soccer-live-predictions/scrape/data/reds.RData")
load("data/debug.RData")
```

```
results_0 = tibble()
results_3 = tibble()
results_3g = tibble()
for(i in 1:91) {
  results_0 = rbind(results_0, debug[[1]]$pred_mod_0[[i]]$Result)
  results_3 = rbind(results_3, debug[[1]]$pred_mod_3_2015_2019[[i]]$Result)
  results_3g = rbind(results_3g, debug[[1]]$pred_mod_3_2015_2019_g[[i]]$Result)
}
names(results_0) = c("Home", "Draw", "Away")
names(results_3) = c("Home", "Draw", "Away")
names(results_3g) = c("Home", "Draw", "Away")
results_0$Minute = 0:90
results_3$Minute = 0:90
results_3g$Minute = 0:90
results_0$Model = "0"
results_3$Model = "3 (2015-2019 fixed gamma)"
results_3g$Model = "3 (2015-2019 free gamma)"
match1 = rbind(results_0, results_3, results_3g) %>%
  pivot_longer(cols = c("Home", "Draw", "Away"),
               names_to = "Result",
               values_to = "Probability")

results_0 = tibble()
results_3 = tibble()
results_3g = tibble()
for(i in 1:91) {
  results_0 = rbind(results_0, debug[[2]]$pred_mod_0[[i]]$Result)
  results_3 = rbind(results_3, debug[[2]]$pred_mod_3_2015_2019[[i]]$Result)
  results_3g = rbind(results_3g, debug[[2]]$pred_mod_3_2015_2019_g[[i]]$Result)
}
names(results_0) = c("Home", "Draw", "Away")
names(results_3) = c("Home", "Draw", "Away")
names(results_3g) = c("Home", "Draw", "Away")
results_0$Minute = 0:90
results_3$Minute = 0:90
results_3g$Minute = 0:90
results_0$Model = "0"
results_3$Model = "3 (2015-2019 fixed gamma)"
```

```
results_3g$Model = "3 (2015-2019 free gamma)"
match2 = rbind(results_0, results_3, results_3g) %>%
  pivot_longer(cols = c("Home", "Draw", "Away"),
               names_to = "Result",
               values_to = "Probability")

results_0 = tibble()
results_3 = tibble()
results_3g = tibble()
for(i in 1:91) {
  results_0 = rbind(results_0, debug[[3]]$pred_mod_0[[i]]$Result)
  results_3 = rbind(results_3, debug[[3]]$pred_mod_3_2015_2019[[i]]$Result)
  results_3g = rbind(results_3g, debug[[3]]$pred_mod_3_2015_2019_g[[i]]$Result)
}
names(results_0) = c("Home", "Draw", "Away")
names(results_3) = c("Home", "Draw", "Away")
names(results_3g) = c("Home", "Draw", "Away")
results_0$Minute = 0:90
results_3$Minute = 0:90
results_3g$Minute = 0:90
results_0$Model = "0"
results_3$Model = "3 (2015-2019 fixed gamma)"
results_3g$Model = "3 (2015-2019 free gamma)"
match3 = rbind(results_0, results_3, results_3g) %>%
  pivot_longer(cols = c("Home", "Draw", "Away"),
               names_to = "Result",
               values_to = "Probability")
```

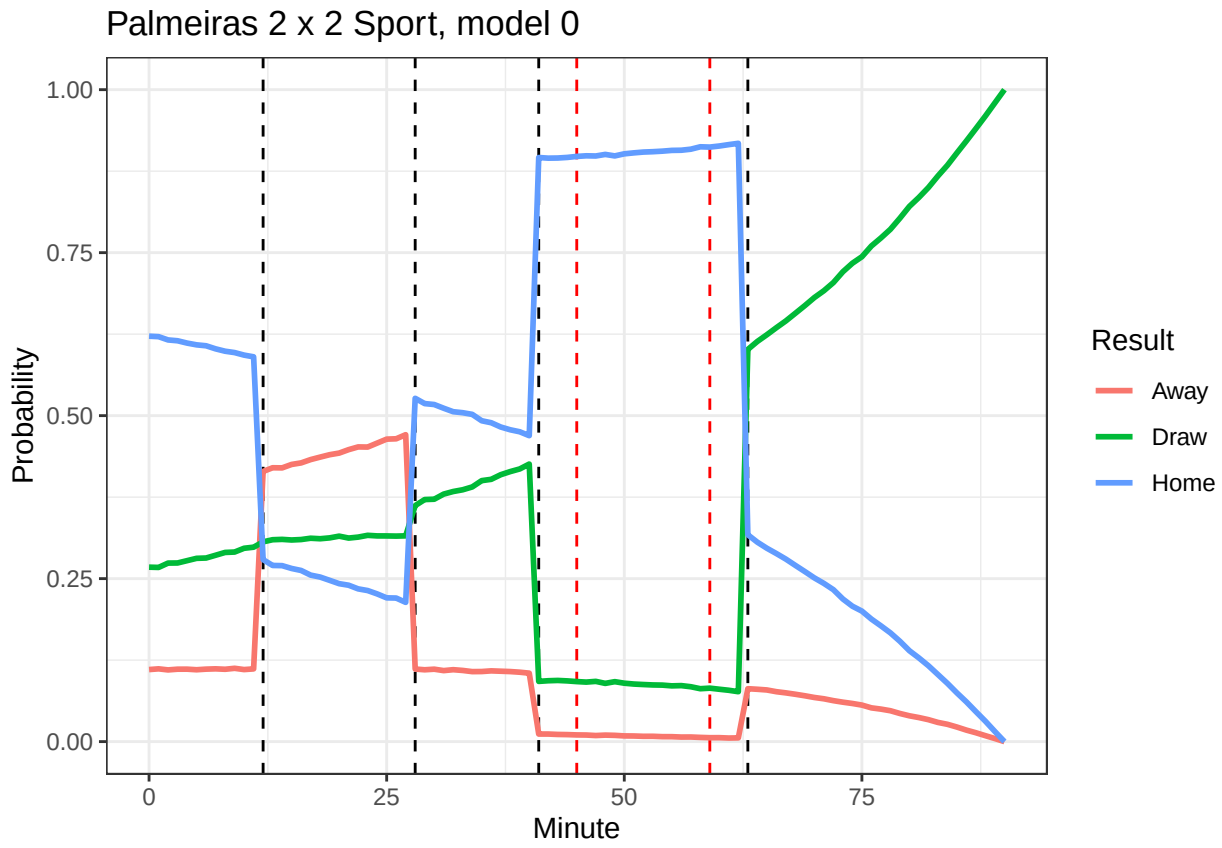
```
goals %>%
  filter(Season == 2020, Match == debug[[1]]$Match$Match)
```

```
## # A tibble: 4 x 11
##   Season Match Date     Home_Team   Score_Home Score_Away Away_Team  Team Minute
##    <dbl> <dbl> <chr>    <chr>            <dbl>      <dbl> <chr>     <dbl>  <dbl>
## 1   2020    93 2020-09~ Palmeiras ~          2          2 Sport - ~     2     12
## 2   2020    93 2020-09~ Palmeiras ~          2          2 Sport - ~     1     28
## 3   2020    93 2020-09~ Palmeiras ~          2          2 Sport - ~     1     41
## 4   2020    93 2020-09~ Palmeiras ~          2          2 Sport - ~     2     18
## # ... with 2 more variables: Stoppage_Time <dbl>, Half <dbl>
```

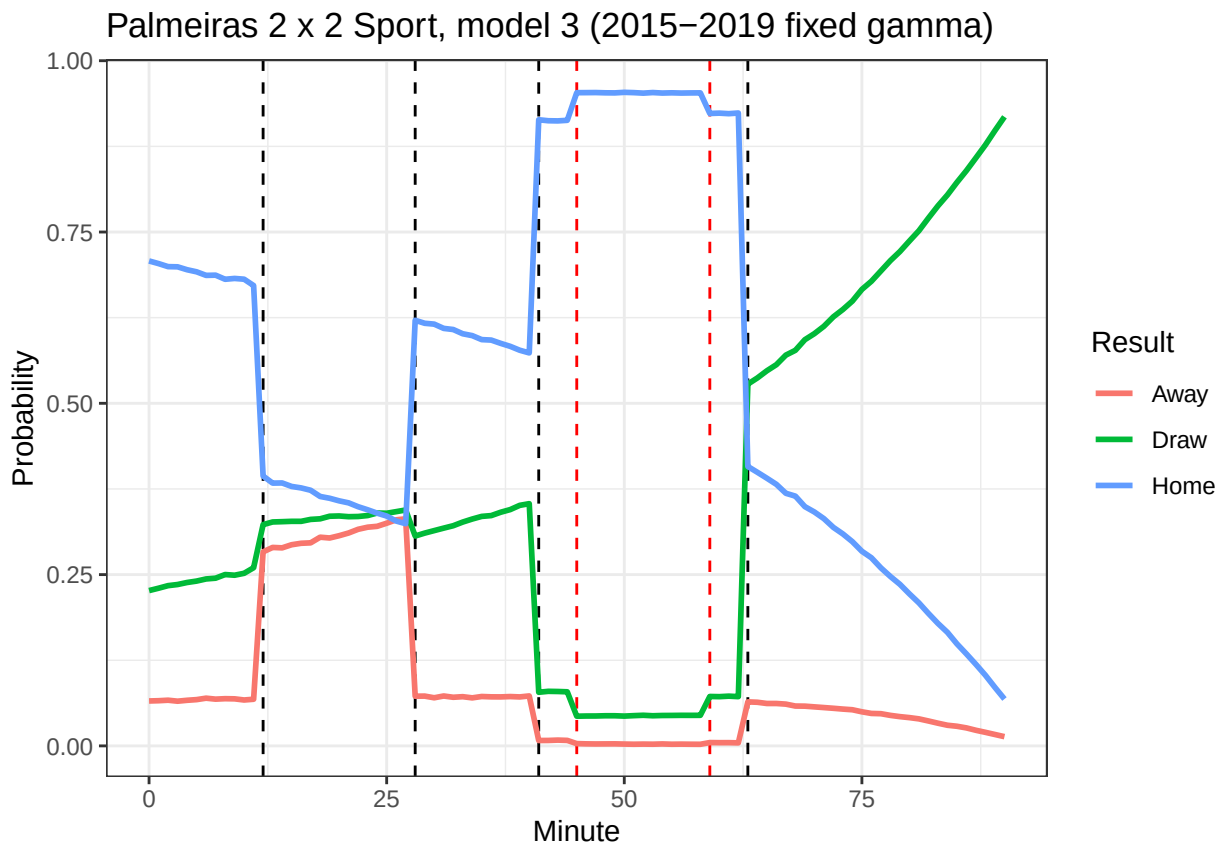
```
reds %>%
  filter(Season == 2020, Match == debug[[1]]$Match$Match)
```

```
## # A tibble: 2 x 11
##   Season Match Date     Home_Team   Score_Home Score_Away Away_Team Minute  Half
##    <dbl> <dbl> <chr>    <chr>            <dbl>      <dbl> <chr>      <dbl> <dbl>
## 1   2020    93 2020-09~ Palmeiras ~          2          2 Sport - ~     45     1
## 2   2020    93 2020-09~ Palmeiras ~          2          2 Sport - ~     14     2
## # ... with 2 more variables: Team <dbl>, Stoppage_Time <dbl>
```

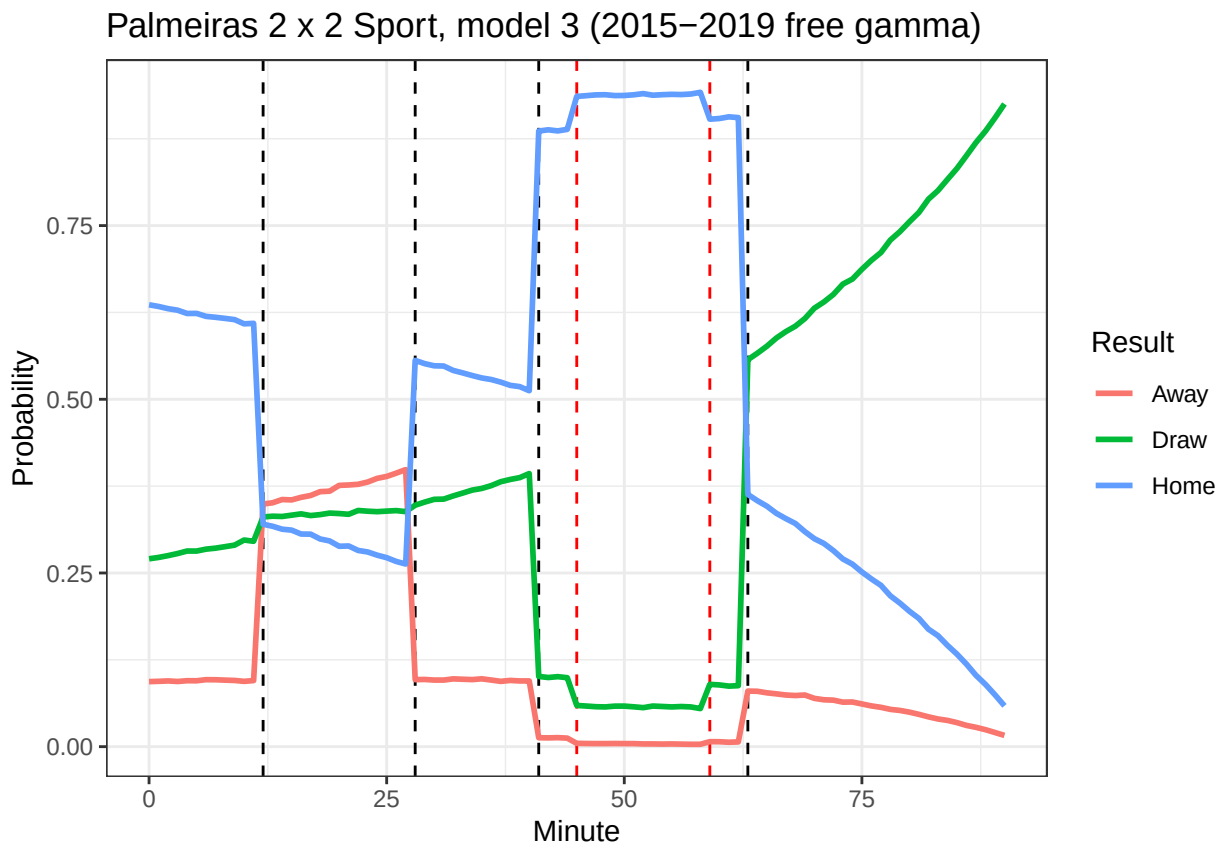
```
match1 %>%
  filter(Model == "0") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 12, linetype = "dashed") +
  geom_vline(xintercept = 28, linetype = "dashed") +
  geom_vline(xintercept = 41, linetype = "dashed") +
  geom_vline(xintercept = 18+45, linetype = "dashed") +
  geom_vline(xintercept = 45, linetype = "dashed", col = "red") +
  geom_vline(xintercept = 45+14, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
  theme_bw() +
  ggtitle("Palmeiras 2 x 2 Sport, model 0")
```




```
match1 %>%
  filter(Model == "3 (2015-2019 fixed gamma)") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 12, linetype = "dashed") +
  geom_vline(xintercept = 28, linetype = "dashed") +
  geom_vline(xintercept = 41, linetype = "dashed") +
  geom_vline(xintercept = 18+45, linetype = "dashed") +
  geom_vline(xintercept = 45, linetype = "dashed", col = "red") +
  geom_vline(xintercept = 14+45, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
  theme_bw() +
  ggtitle("Palmeiras 2 x 2 Sport, model 3 (2015-2019 fixed gamma)")
```




```
match1 %>%
  filter(Model == "3 (2015-2019 free gamma)") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 12, linetype = "dashed") +
  geom_vline(xintercept = 28, linetype = "dashed") +
  geom_vline(xintercept = 41, linetype = "dashed") +
  geom_vline(xintercept = 18+45, linetype = "dashed") +
  geom_vline(xintercept = 45, linetype = "dashed", col = "red") +
  geom_vline(xintercept = 14+45, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
  theme_bw() +
  ggtitle("Palmeiras 2 x 2 Sport, model 3 (2015-2019 free gamma)")
```



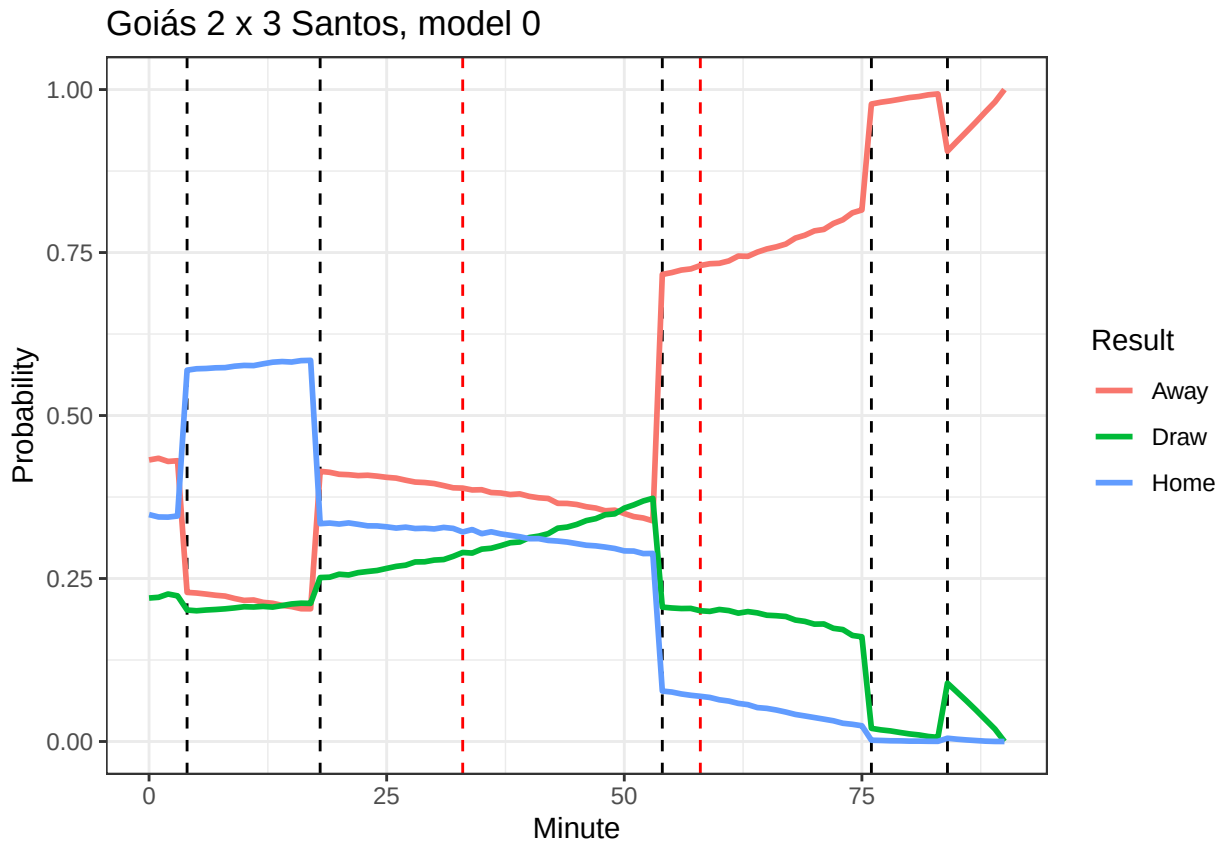

```
goals %>%
  filter(Season == 2020, Match == debug[[2]]$Match$Match)
```

```
## # A tibble: 5 x 11
##   Season Match Date       Home_Team Score_Home Score_Away Away_Team   Team Minute
##    <dbl> <dbl> <chr>      <chr>          <dbl>      <dbl> <chr>      <dbl>  <dbl>
## 1   2020   130 2020-10-~ Goiás - ~           2          3 Santos - ~     1      4
## 2   2020   130 2020-10-~ Goiás - ~           2          3 Santos - ~     2     18
## 3   2020   130 2020-10-~ Goiás - ~           2          3 Santos - ~     2      9
## 4   2020   130 2020-10-~ Goiás - ~           2          3 Santos - ~     2     31
## 5   2020   130 2020-10-~ Goiás - ~           2          3 Santos - ~     1     39
## # ... with 2 more variables: Stoppage_Time <dbl>, Half <dbl>
```

```
reds %>%
  filter(Season == 2020, Match == debug[[2]]$Match$Match)
```

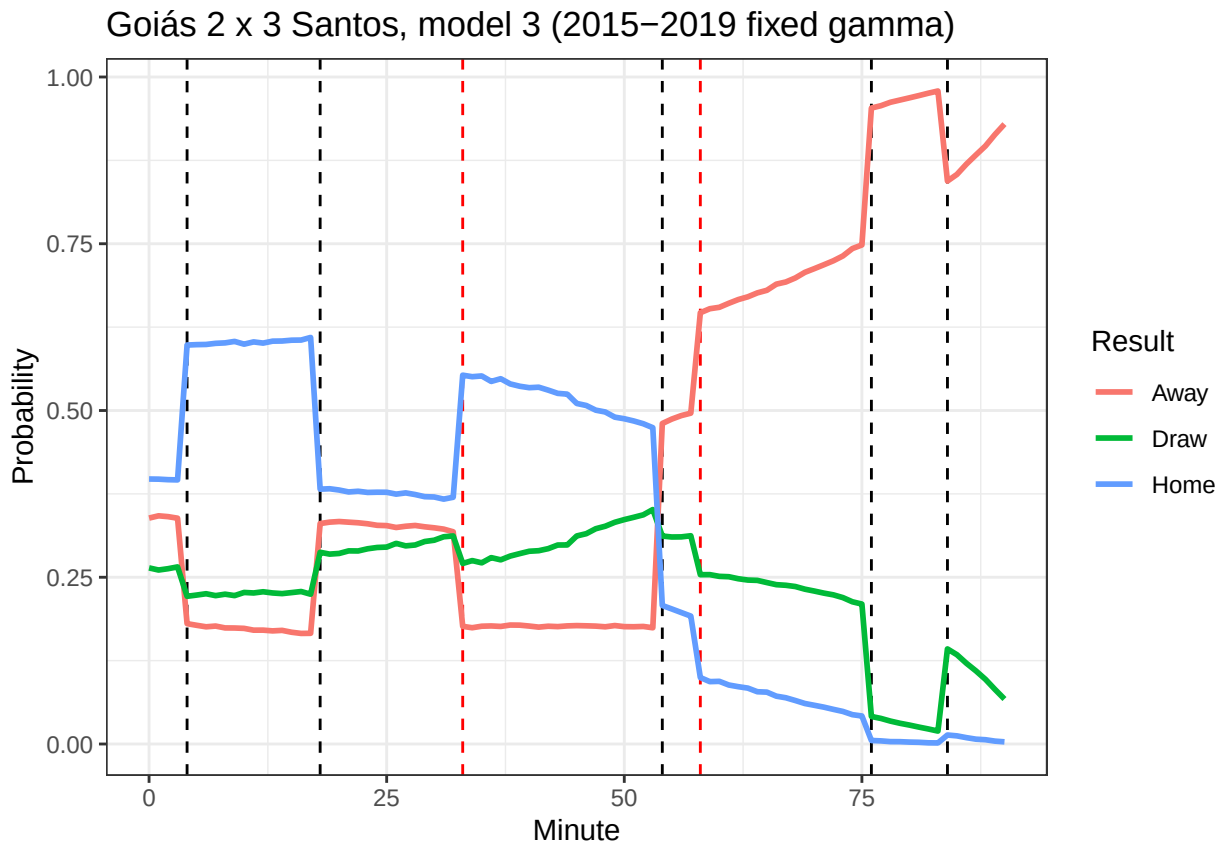
```
## # A tibble: 2 x 11
##   Season Match Date       Home_Team Score_Home Score_Away Away_Team  Minute  Half
##    <dbl> <dbl> <chr>      <chr>          <dbl>      <dbl> <chr>      <dbl> <dbl>
## 1   2020   130 2020-10-~ Goiás - ~           2          3 Santos - ~     33     1
## 2   2020   130 2020-10-~ Goiás - ~           2          3 Santos - ~     13     2
## # ... with 2 more variables: Team <dbl>, Stoppage_Time <dbl>
```

```
match2 %>%
  filter(Model == "0") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 4, linetype = "dashed") +
  geom_vline(xintercept = 18, linetype = "dashed") +
  geom_vline(xintercept = 9+45, linetype = "dashed") +
  geom_vline(xintercept = 31+45, linetype = "dashed") +
  geom_vline(xintercept = 39+45, linetype = "dashed") +
  geom_vline(xintercept = 33, linetype = "dashed", col = "red") +
  geom_vline(xintercept = 13+45, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
  theme_bw() +
  ggtitle("Goiás 2 x 3 Santos, model 0")
```

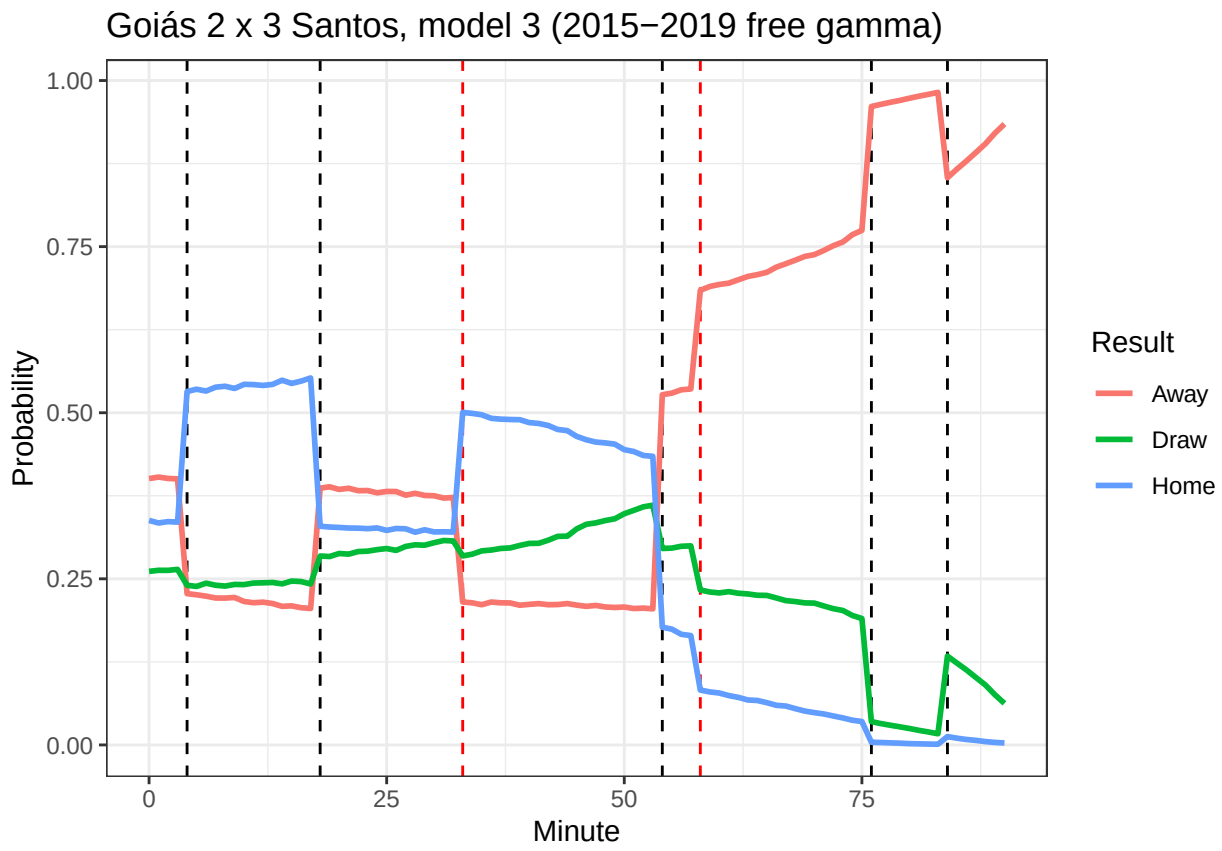



```
match2 %>%
  filter(Model == "3 (2015-2019 fixed gamma)") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 4, linetype = "dashed") +
  geom_vline(xintercept = 18, linetype = "dashed") +
  geom_vline(xintercept = 9+45, linetype = "dashed") +
  geom_vline(xintercept = 31+45, linetype = "dashed") +
  geom_vline(xintercept = 39+45, linetype = "dashed") +
  geom_vline(xintercept = 33, linetype = "dashed", col = "red") +
  geom_vline(xintercept = 13+45, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
```

```
  theme_bw() +
  ggtitle("Goiás 2 x 3 Santos, model 3 (2015-2019 fixed gamma)")
```




```
match2 %>%
  filter(Model == "3 (2015-2019 free gamma)") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 4, linetype = "dashed") +
  geom_vline(xintercept = 18, linetype = "dashed") +
  geom_vline(xintercept = 9+45, linetype = "dashed") +
  geom_vline(xintercept = 31+45, linetype = "dashed") +
  geom_vline(xintercept = 39+45, linetype = "dashed") +
  geom_vline(xintercept = 33, linetype = "dashed", col = "red") +
  geom_vline(xintercept = 13+45, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
  theme_bw() +
  ggtitle("Goiás 2 x 3 Santos, model 3 (2015-2019 free gamma)")
```




```
goals %>%
  filter(Season == 2020, Match == debug[[3]]$Match$Match)
```

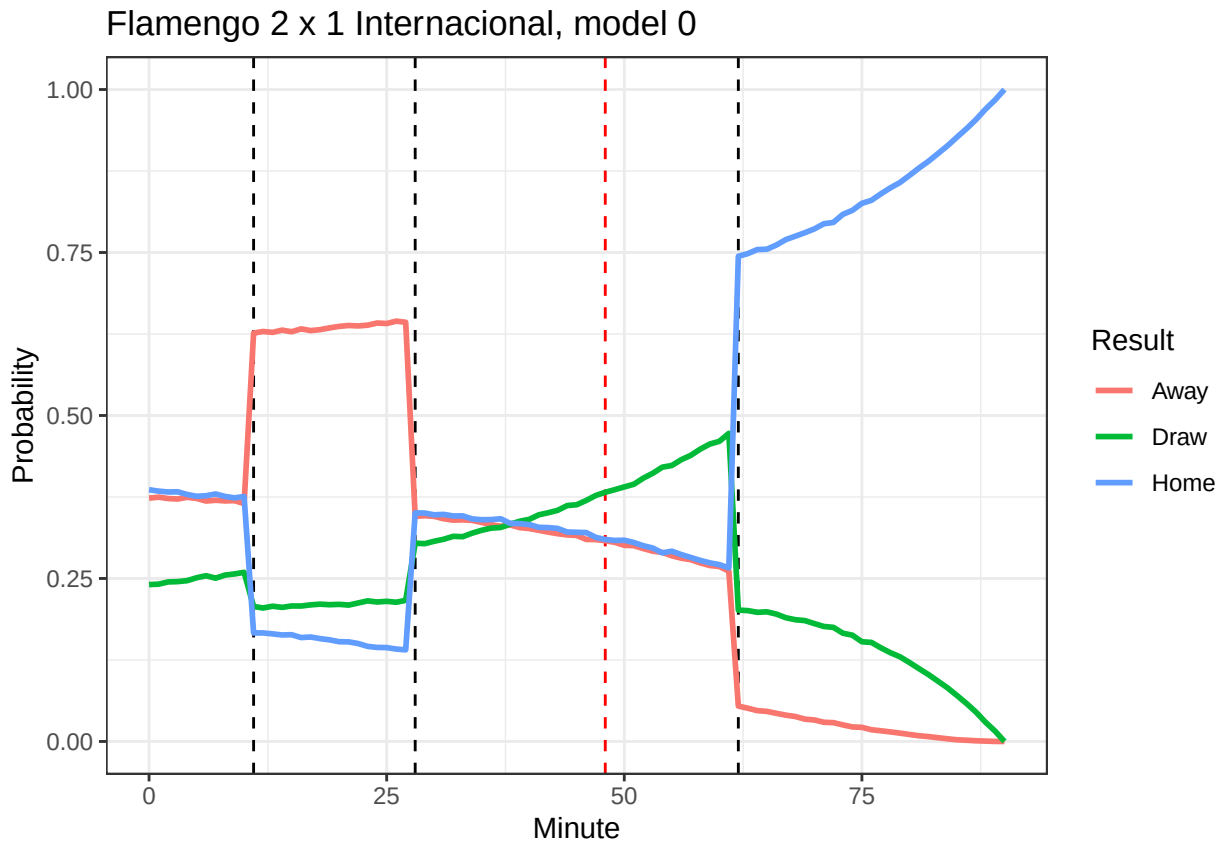
```
## # A tibble: 3 x 11
##   Season Match Date    Home_Team  Score_Home Score_Away Away_Team    Team Minute
##    <dbl> <dbl> <chr>   <chr>           <dbl>      <dbl> <chr>       <dbl>  <dbl>
## 1   2020   361 2021-0~ Flamengo ~          2          1 Internacio~     2     11
## 2   2020   361 2021-0~ Flamengo ~          2          1 Internacio~     1     28
## 3   2020   361 2021-0~ Flamengo ~          2          1 Internacio~     1     17
## # ... with 2 more variables: Stoppage_Time <dbl>, Half <dbl>
```

```
reds %>%
  filter(Season == 2020, Match == debug[[3]]$Match$Match)
```

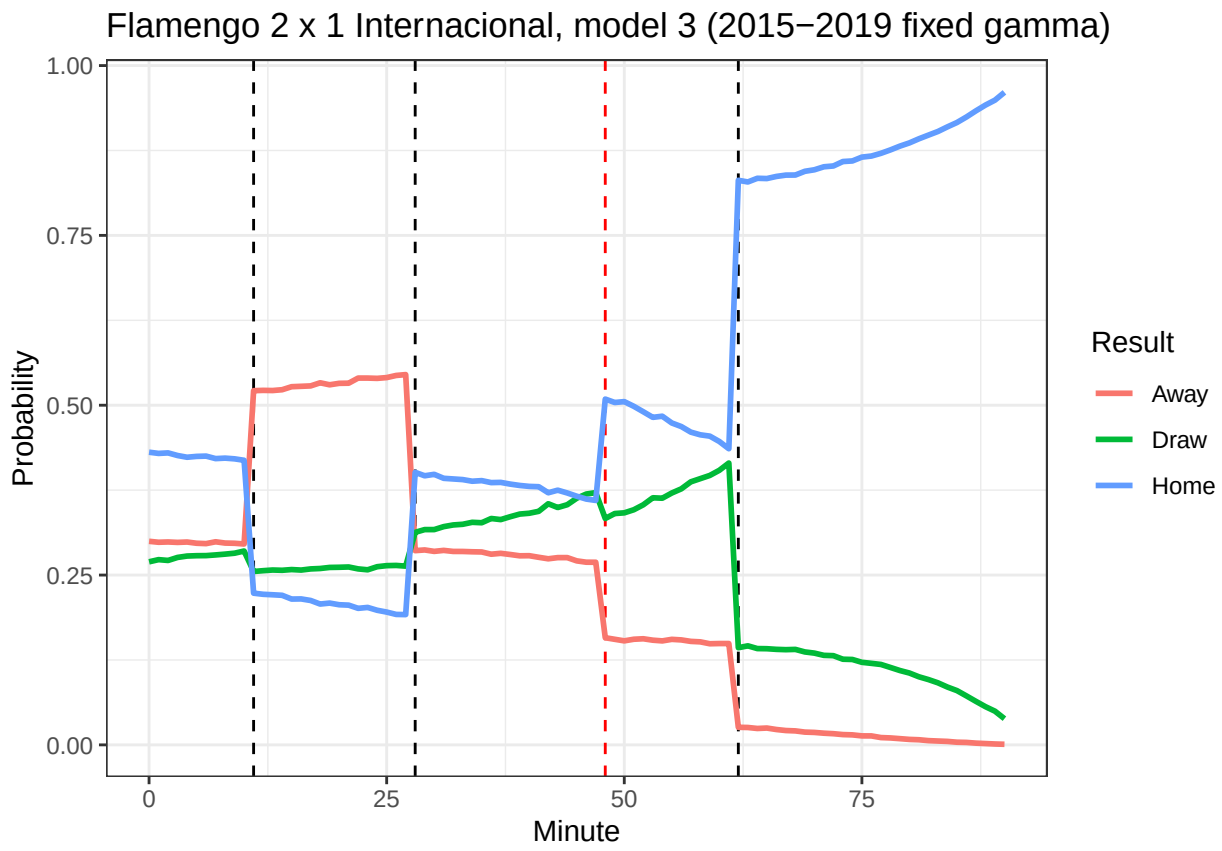
```
## # A tibble: 1 x 11
##   Season Match Date    Home_Team  Score_Home Score_Away Away_Team   Minute  Half
##    <dbl> <dbl> <chr>   <chr>           <dbl>      <dbl> <chr>        <dbl> <dbl>
## 1   2020   361 2021-0~ Flamengo ~          2          1 Internacio~      3     2
## # ... with 2 more variables: Team <dbl>, Stoppage_Time <dbl>
```

```
match3 %>%
  filter(Model == "0") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 11, linetype = "dashed") +
```

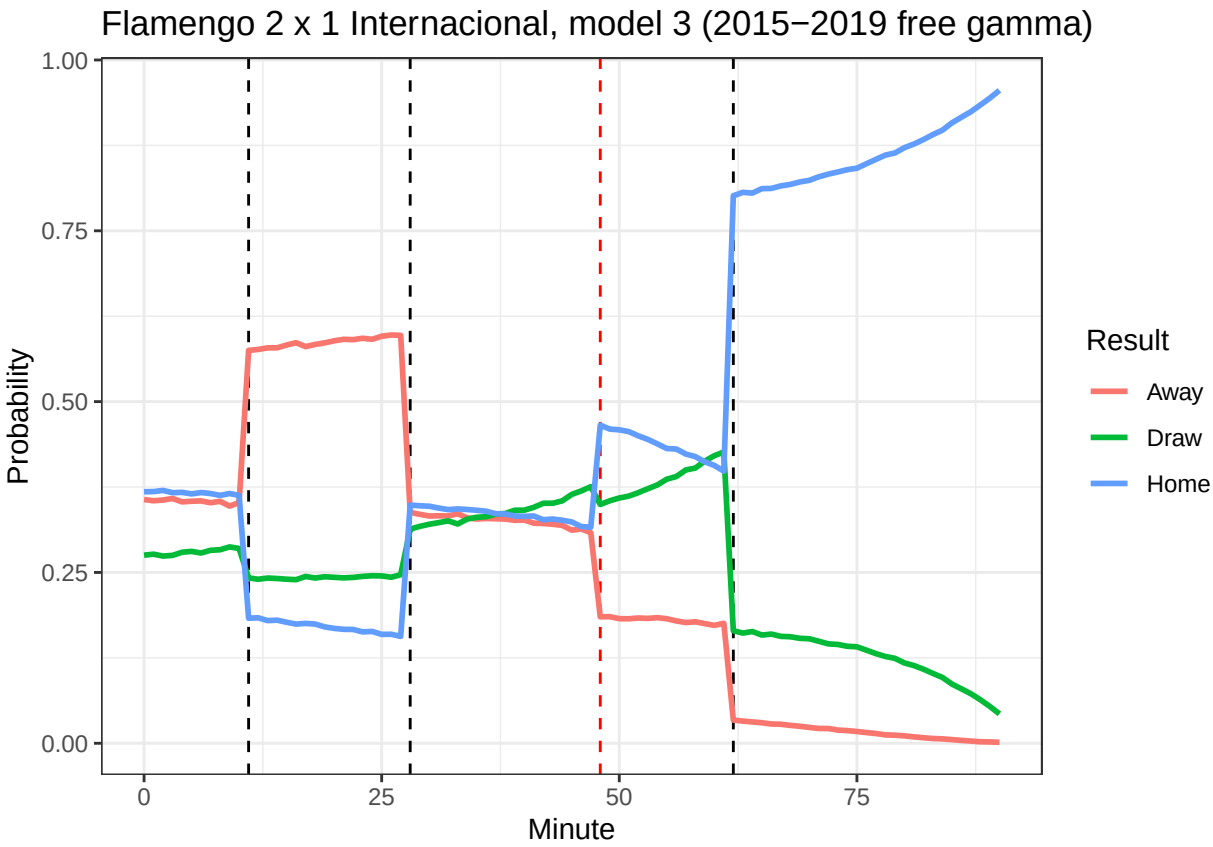
```
  geom_vline(xintercept = 28, linetype = "dashed") +
  geom_vline(xintercept = 17+45, linetype = "dashed") +
  geom_vline(xintercept = 3+45, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
  theme_bw() +
  ggtitle("Flamengo 2 x 1 Internacional, model 0")
```




```
match3 %>%
  filter(Model == "3 (2015-2019 fixed gamma)") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 11, linetype = "dashed") +
  geom_vline(xintercept = 28, linetype = "dashed") +
  geom_vline(xintercept = 17+45, linetype = "dashed") +
  geom_vline(xintercept = 3+45, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
  theme_bw() +
  ggtitle("Flamengo 2 x 1 Internacional, model 3 (2015-2019 fixed gamma)")
```




```
match3 %>%
  filter(Model == "3 (2015-2019 free gamma)") %>%
  ggplot(aes(x = Minute, y = Probability, col = Result)) +
  geom_vline(xintercept = 11, linetype = "dashed") +
  geom_vline(xintercept = 28, linetype = "dashed") +
  geom_vline(xintercept = 17+45, linetype = "dashed") +
  geom_vline(xintercept = 3+45, linetype = "dashed", col = "red") +
  geom_line(size = 1) +
  theme_bw() +
  ggtitle("Flamengo 2 x 1 Internacional, model 3 (2015-2019 free gamma)")
```


Flamengo 2 x 1 Internacional, model 3 (2015−2019 free gamma)
Probability
1.00
0.75
0.50
0.25
0.00
0
25
50
75
Minute
Result
Away
Draw
Home