Model 3 Neg Binom

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Beginning Data preparing

```
## Ben's DRTG code!
# Calculate total points per team per game
# here, datatest2 is the entire data frame that is not filtered for starters
# filtering dataset to remove NAs which arise a player doesnt record any minutes in the game (sitting o
team_points <- na.omit(original_tbl) %>%
  group_by(GAME_ID, TEAM_ID) %>%
  summarize(TeamPoints = sum(PTS), .groups = "drop")

#
team_points_opponent <- team_points %>%
  rename(OPP_TEAM_ID = TEAM_ID, OpponentPoints = TeamPoints)

# join and filter
team_vs_opponent <- team_points %>%
  inner_join(team_points_opponent, by = "GAME_ID") %>%
  filter(TEAM_ID != OPP_TEAM_ID)

# calculate average opponent points per team (our DRTG)
team_drtg <- team_vs_opponent %>%
  group_by(TEAM_ID) %>%
  summarize(DRTG_proxy = mean(OpponentPoints), n_games = n(), .groups = "drop")

range(team_drtg$DRTG_proxy)
```

```
## [1] 106.5244 123.0366
```

```
mean(team_drtg$DRTG_proxy)
```

```
## [1] 114.2114
```

DRTG data being joined to the starting data

```
## NOW ADDING DRTG vars to original_tbl


# Each team plays one opponent per game, so we pair them like this:
game_team_pairs <- original_tbl %>%
  select(GAME_ID, TEAM_ID) %>%
  distinct()
```

```r
# Join to get each game twice: once for each team, with their opponent
opponent_map <- game_team_pairs %>%
  inner_join(game_team_pairs, by = "GAME_ID") %>%
  filter(TEAM_ID.x != TEAM_ID.y) %>%
  rename(TEAM_ID = TEAM_ID.x, OPP_TEAM_ID = TEAM_ID.y)

# Add opponent DRTG to the mapping
opponent_map <- opponent_map %>%
  left_join(team_drtg %>% rename(OPP_TEAM_ID = TEAM_ID, OPP_DRTG = DRTG_proxy),
            by = "OPP_TEAM_ID")

# Join to add opponent DRTG column to the full data
starting_dat <- starting_dat %>%
  left_join(opponent_map, by = c("GAME_ID", "TEAM_ID"))

mean_drtg <- mean(team_drtg$DRTG_proxy)
starting_dat <- starting_dat %>%
  mutate(centered_OPP_DRTG = OPP_DRTG - mean_drtg)
```