```
library(ggplot2)
library(ggpmisc)
```

```
# generate artificial data
set.seed(4321)
x <- 1:100
y <- (x + x^2 + x^3) + rnorm(length(x), mean = 0, sd = mean(x^3) / 4)
my.data <- data.frame(x,
                      y,
                      group = c("A", "B"),
                      y2 = y * c(0.5,2),
                      block = c("a", "a", "b", "b"))

str(my.data)

## 'data.frame': 100 obs. of  5 variables:
##  $ x    : int  1 2 3 4 5 6 7 8 9 10 ...
##  $ y    : num  -27205 -14243 45791 53731 -8029 ...
##  $ group: Factor w/ 2 levels "A","B": 1 2 1 2 1 2 1 2 1 2 ...
##  $ y2   : num  -13603 -28485 22895 107463 -4014 ...
##  $ block: Factor w/ 2 levels "a","b": 1 1 2 2 1 1 2 2 1 1 ...
```

```
# plot
ggplot(data = my.data, mapping=aes(x = x, y = y2, colour = group)) +
  geom_point() +
  geom_smooth(method = "lm", se =  FALSE,
              formula = y ~ poly(x=x, degree = 2, raw = TRUE)) +
  stat_poly_eq(
    mapping      = aes(label = paste("$", ..eq.label.., "$\\ \\ \\ $",
                                     ..rr.label.., "$", sep = ""))
    , geom        = "text"
    , formula     = y ~ poly(x, 2, raw = TRUE)
    , eq.with.lhs = "\\hat{Y} = "
    , output.type = "LaTeX"
  ) +
  theme_bw()
```

$\hat{Y} = 13900 - 2230x + 67.5x^2 \quad R^2 = 0.96$
$\hat{Y} = 169000 - 14400x + 327x^2 \quad R^2 = 0.96$