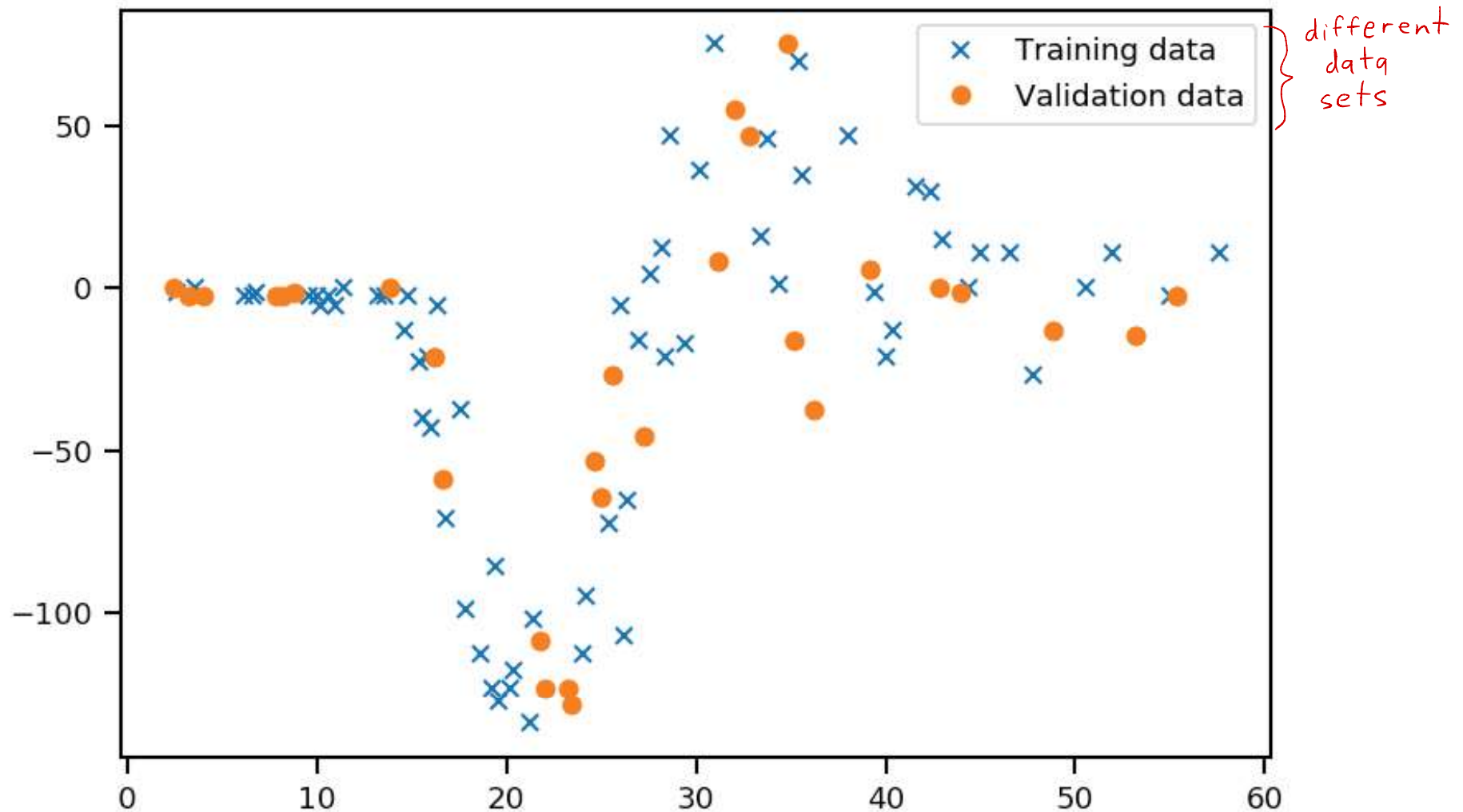


Lecture 13: Linear Regression via Least Squares

Professor Ilias Bilonis

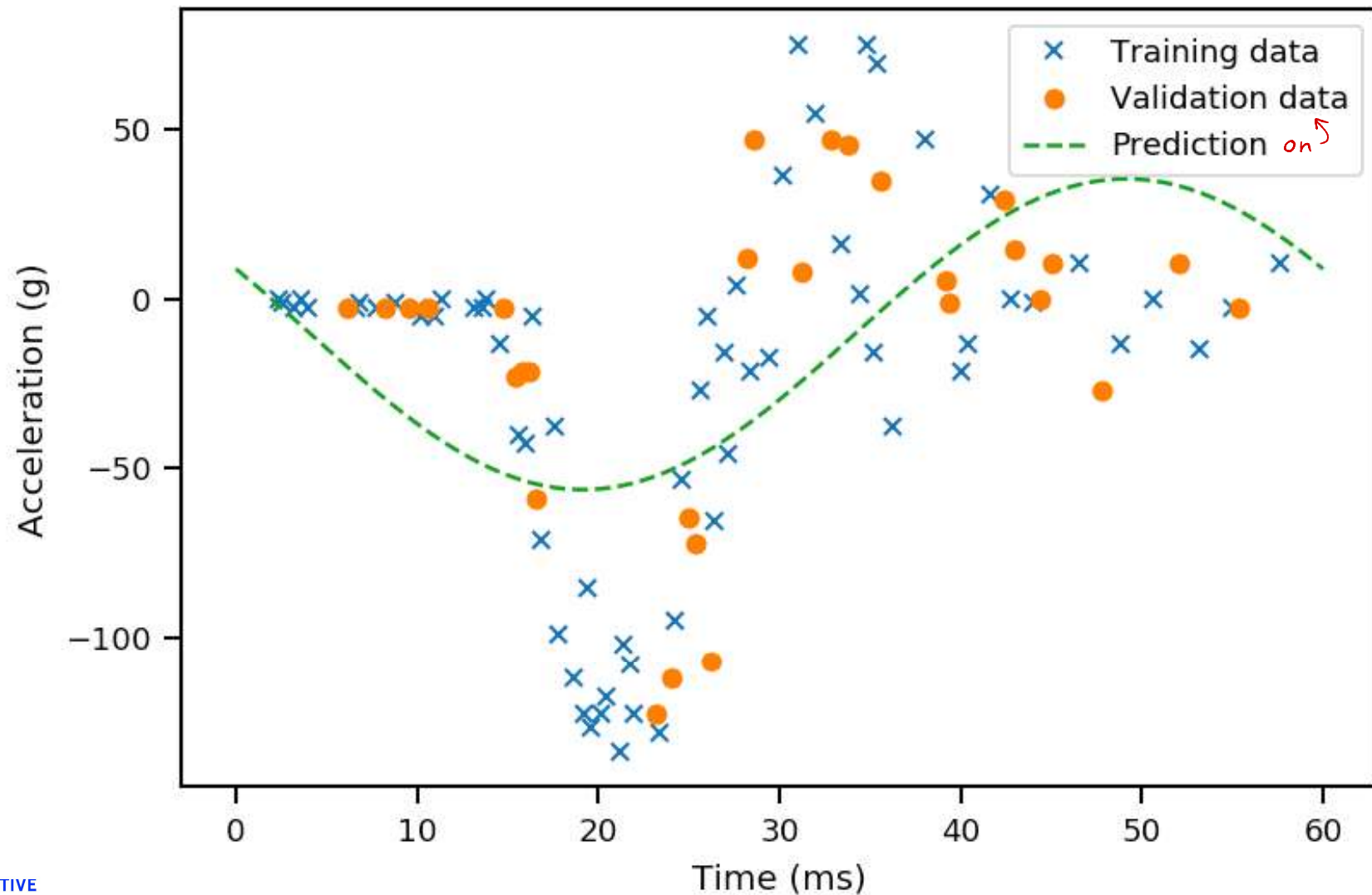
Measures of predictive accuracy

Validation points



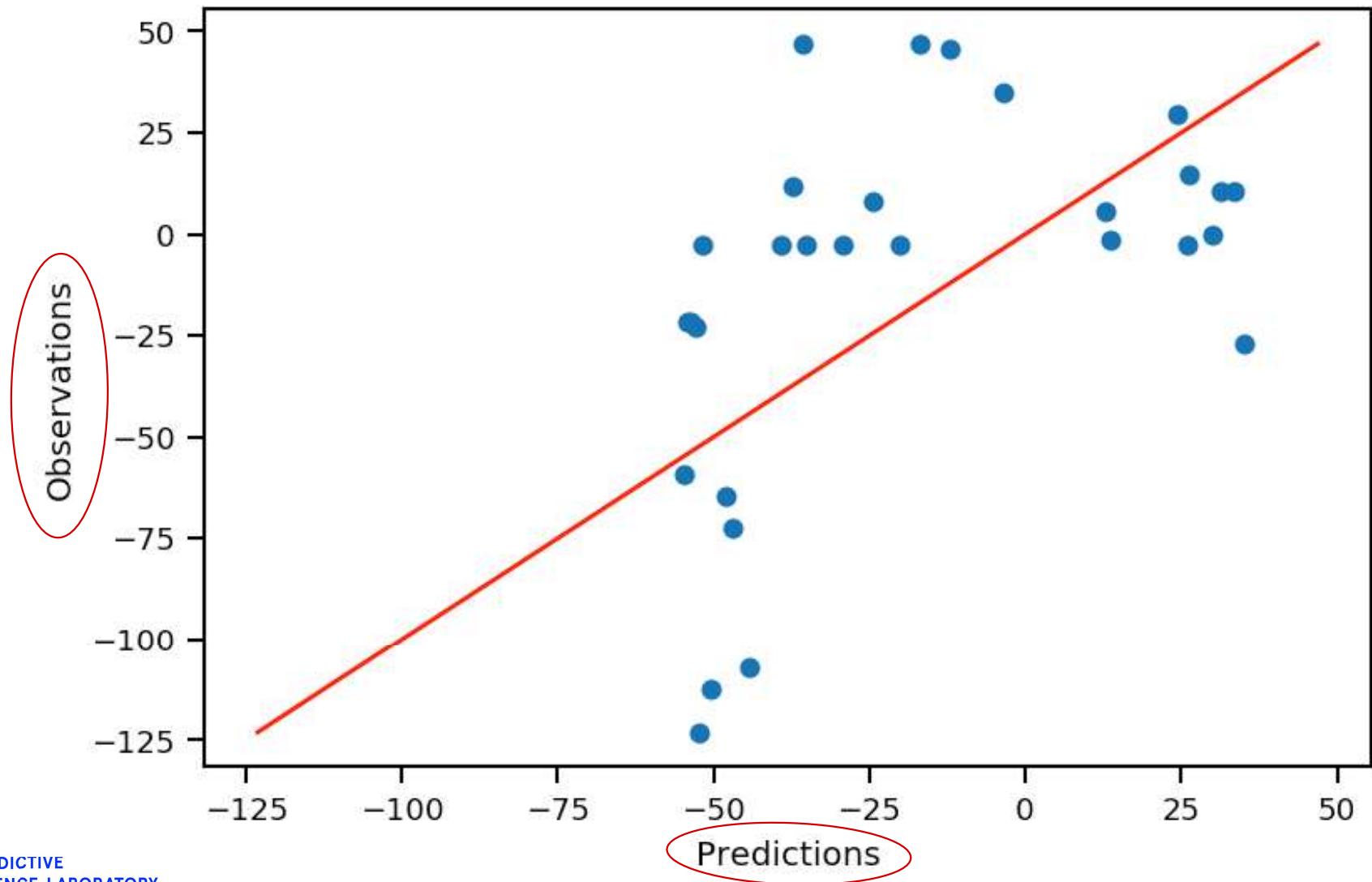
Fit a generalized model with a Fourier basis

Fourier L=60.00, terms = 2

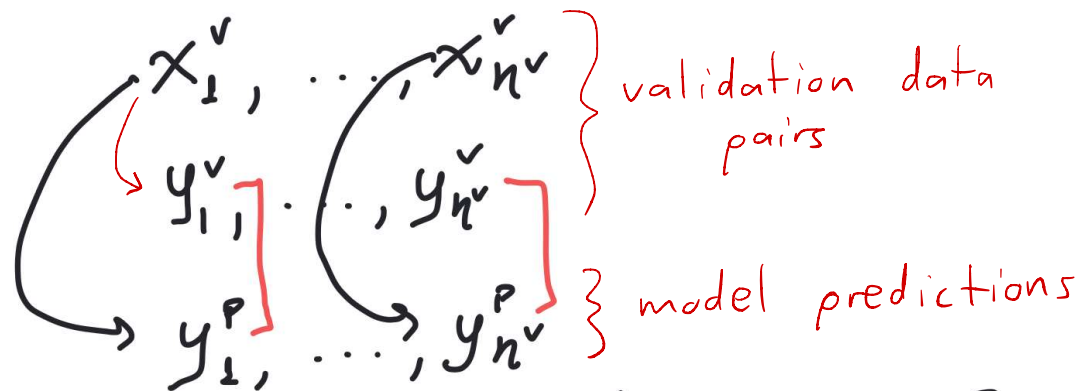


Predictions vs Observations Plot

Fourier L=60.00, terms = 2

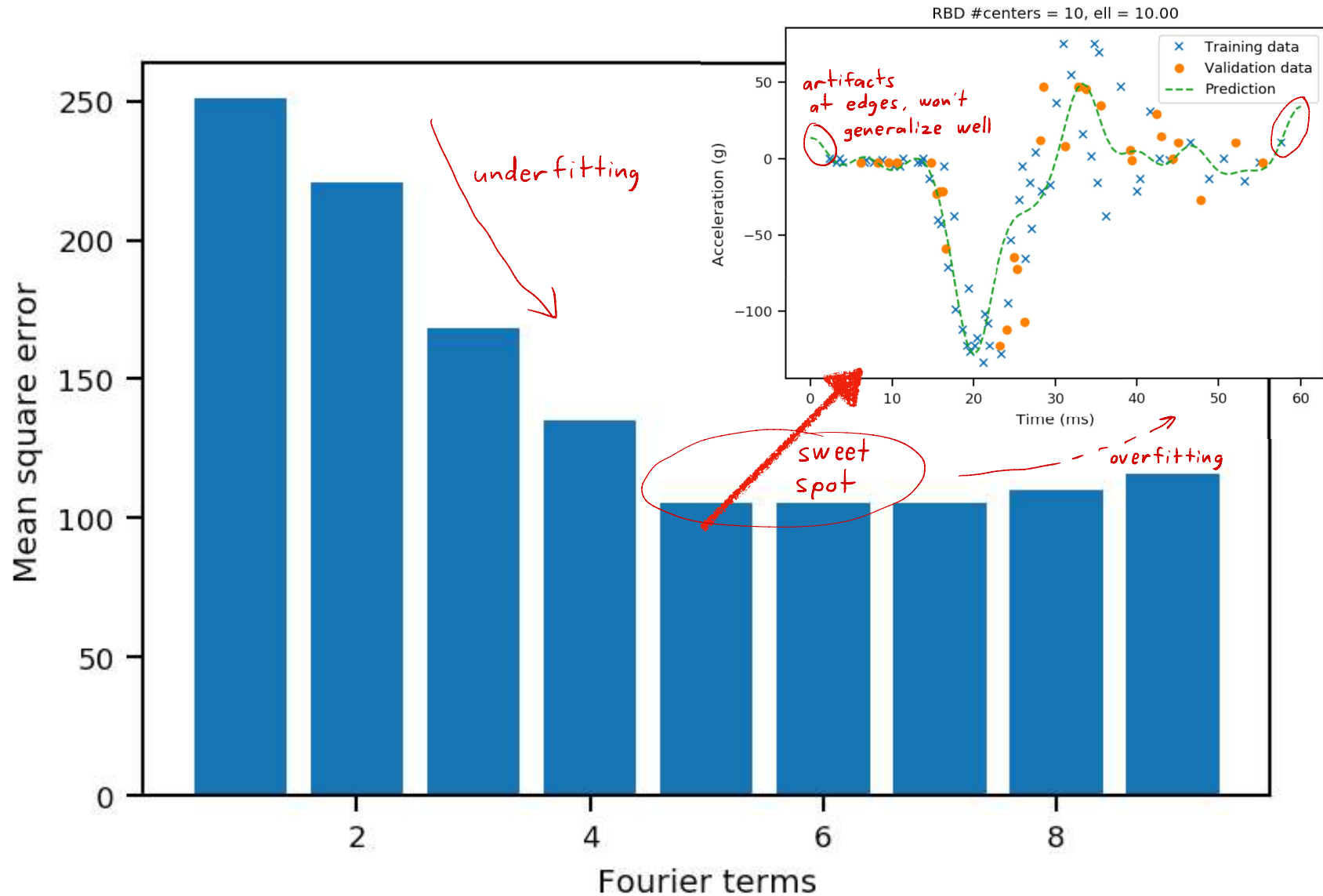


Mean Square Error



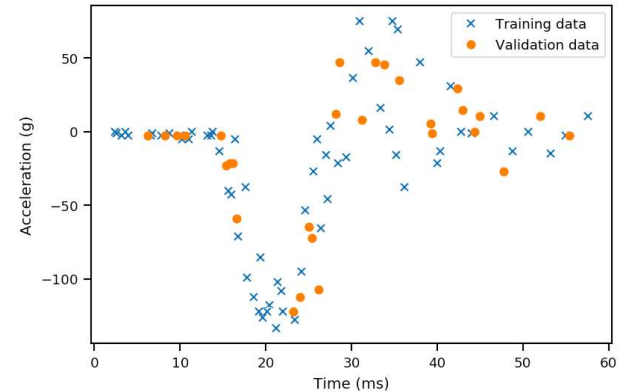
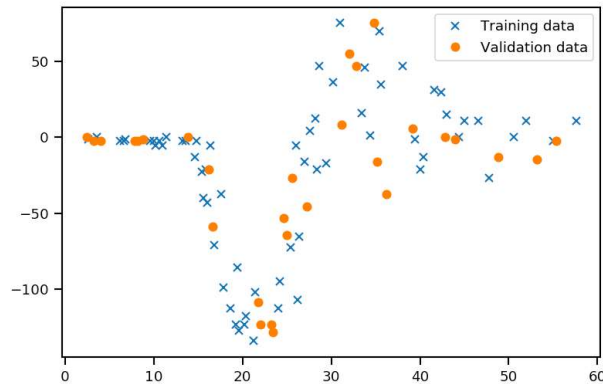
$$MSE = \frac{1}{n^v} \sum_{i=1}^{n^v} (y_i^v - y_i^p)^2$$

Mean Square Error



Cross validation

↳ to help with avoiding overfitting of the validation data



repeatedly train & validate with different random subsets of the data, take average MSE

