Topic 14: Regularization Methods in Thresholded Parameter Space

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Key points: The connections and differences of all regularization methods and some interesting phase transition phenomena.

Disclaimer: *The note is built on Prof. Jinchi Lv's lectures of the course at USC, DSO 607, High-Dimensional Statistics and Big Data Problems.*

14.1   Model Setup

Now, consider a generalized linear model (GLM) linking a p-dimensional predictor $\mathbf{x}$ to a scalar response Y