

Bickel, P.J. and Li, B. (2006) Regularization in statistics. *Test* 15, 271–344.

Abstract:

Regularization is frequently used in mathematics, statistics, computer science, and finance to solve ill-posed problems that could not be otherwise solved. In statistics alone, various regularization techniques have been proposed in different research directions, such as nonparametric statistics, high-dimensional statistics, and Bayesian statistics. Before this discussion paper by Bickel and Li (2006), these were just scattered results without a neat organization. Bickel and Li were among the first to bring up a conceptual framework to incorporate most statistical regularizers under the same umbrella. We will go over these regularization methods mentioned in this paper and discuss the vast new developments ever since.