

# Smoothing and variable selection in additive models

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## **Abstract.**

In this talk we consider additive modeling and apply the nonnegative garrote method (Breiman (1995) and Cantoni *et al.* (2009)) for selecting among the independent variables. For initial estimation of the unknown univariate functions, we use P-splines estimation (Eilers & Marx (1996)) and backfitting is applied to deal with the additive modeling. We also propose another method, APSO, based on the smoothing idea of P-splines and the variable selection idea of LASSO (Tibshirani, 1996). We compare the proposed methods involving P-splines with some other methods for additive models. The finite-sample performance of the procedures is investigated via a simulation study and an illustration with real data is provided.

## References

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