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A Robust and Diagnostic Information Criterion for Selecting Regression Models

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Abstract: We combine the selection of a statistical model with the robust parameter estimation and diagnostic properties of the Forward Search. As a result we obtain procedures that select the best model in the presence of outliers. We derive distributional properties of our method and illustrate it on data on ozone concentration. The effect of outliers on the choice of a model is revealed. Although our example is for regression, the connection with AIC is stressed.

Key words: AIC, C_p, Forward Search, outliers

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