



**The Department of Mathematics, Statistics and Computer Science**

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presents

# **Variable Selection Problem**

by

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Variable selection is an important topic in high-dimensional statistical modeling, especially in generalized linear models. Several variable selection procedures have been developed in the literature, including the sequential approach, prediction-error approach, and information-theoretic approach. All of these are computationally expensive. A new method based on penalized likelihood has been lauded for its computational efficiency and stability. In this approach the variable selection and the estimation of the coefficients are carried out simultaneously. Simulation studies show that SCAD method is consistent and comparable performance when a parametric model is available.