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Title: Adaptive LASSO using principal components

Abstract: The LASSO has emerged as a popular method for model selection in regression. However, in the case of a group of strongly correlated predictors, it tends to select a single predictor from the group while setting the coefficients for the remaining predictors to zero. Some extensions to the LASSO that address this issue have been proposed, for example, the fused LASSO (Tibshirani et al, 2005, JRSS (B)) and OSCAR (Bondell and Reich, 2007, Biometrics). We propose a modification of the LASSO using principal components to select linear combinations of the parameters to include in the LASSO penalty.