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spikeSlabGAM: Bayesian Variable Selection, Model Choice and Regularization for Generalized Additive Mixed Models in R

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The R package spikeSlabGAM implements Bayesian variable selection, model choice, and regularized estimation in (geo-)additive mixed models for Gaussian, binomial, and Poisson responses. Its purpose is to (1) choose an appropriate subset of potential covariates and their interactions, (2) to determine whether linear or more flexible functional forms are required to model the effects of the respective covariates, and (3) to estimate their shapes. Selection and regularization of the model terms is based on a novel spike-and-slab-type prior on coefficient groups associated with parametric and semi-parametric effects.

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