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stgam: An R package for GAM-based varying coefficient models

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Summary

We are often interested in understanding how and where statistical relationships vary over space, and how they change over time. Quantifying such *process heterogeneity* (spatial and or temporal) can be done using *varying coefficient* models. The opportunity to undertake such space-time analyses are greater due to the increased generation and availability of data that include both spatial and temporal attributes (e.g. GPS coordinates and time-stamps). The **stgam** package provides a framework for creating regression models using Generalized Additive Models (GAMs) (Hastie & Tibshirani, 1990) in which the relationships between the response (dependent) variable and individual predictor (independent) variables are allowed to vary over space, time or both.

Reference

Hastie, T., & Tibshirani, R. (1990). Generalized additive models. Chapman hall & CRC. *Monographs on Statistics & Applied Probability. Chapman and Hall/CRC*, *1*.