

## Exploration and Refinement of Regression Tree Models with Interactive Maps and Spatial Data Transformations

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**Abstract.** The problem we address is prediction of expected values of some attribute of spatial objects based on values of other attributes, including the geographic positions. A common approach to obtaining such predictions is regression modelling. It is highly desirable that predictive models are not only accurate but also understandable to the users, which gives preference to simpler models. We propose a set of visualization techniques and interactive operations that supports exploration, evaluation, refinement, and simplification of regression tree models. In particular, the analyst can investigate how the model components and their properties are related to the spatial distribution of the objects, and can make the model better account for the spatial aspect of the data by generating new space-based attributes and supplying them to the model building tool.

**Keywords.** Predictive modelling, geovisualisation, analytical cartography, visual analytics