**Functional Data Methods for Replicated Point Processes**

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**Abstract**

Functional Data Analysis has traditionally focused on samples of smooth functions. However, many functional data methods can be extended to discrete point processes which are driven by smooth intensity functions. We will review some models that can be used for principal component analysis, joint modelling of discrete and continuous processes, and clustering of spatiotemporal point processes. We will apply these methods to the analysis of spatiotemporal patterns of bike demand in the Divvy bike-sharing system of the city of Chicago.