

Statistics Seminar
Department of Mathematical Sciences

DATE:	Thursday, May 6, 2021
TIME:	1:15pm - 2:15pm
LOCATION:	WH 100E
SPEAKER:	Yifeng Zheng, Binghamton University
TITLE:	A Penalized Spline Approach to Functional Mixed Effects Model Analysis

Abstract

In this article of Huaihou Chen and Yuanjia Wang, they proposed penalized spline (P-spline)-based methods for functional mixed effects models with varying coefficients. They decomposed longitudinal outcomes as a sum of several terms: a population mean function, covariates with time-varying coefficients, functional subject-specific random effects, and residual measurement error processes. Proposed methods offer flexible estimation of both the population- and subject-level curves. In addition, decomposing variability of the outcomes as a between- and within-subject source is useful in identifying the dominant variance component therefore optimally model a covariance function. The benefit of the between- and within-subject covariance decomposition is illustrated through an analysis of Berkeley growth data, where they identified clearly distinct patterns of the between- and within-subject covariance functions of children's heights.

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