

**Indiana University-Purdue University
Indianapolis**
Department of Mathematical Sciences

STATISTICS SEMINAR

12:15pm—1:15pm, Tuesday, October 12, 2021
Zoom Meeting: Meeting ID: 845 0989 4694

Speaker: Xiang Wang
Department of Mathematical Sciences, IUPUI

Title: Empirical likelihood inference for functional mean models accounting for within-subject correlation

Abstract:

We consider the one-step-refining inference for the mean function of sparse functional data to account for the within-subject correlation. The refined estimator improves the efficiency of the local kernel smoothing estimator which assumes working independence correlation structure. The empirical likelihood (EL) based inference is proposed for the functional mean function with bias-correlated estimating equation derived from the one-step-refining procedure. We not only establish the asymptotic normality of the refined estimator but also derive the Wilk's theorem for the empirical likelihood ratio test. The proposed methods perform favorably in finite sample applications from our simulation studies as well as real data application to the Alzheimers Disease Neuroimaging Initiative (ADNI) study.