

## Statistics and Data Science Seminar

### *Functional Regression with Mixed Predictors*

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**Abstract:** We consider a general functional regression model, allowing for both functional and high-dimensional vector predictors. Based on this general setting, we propose a penalized least squares estimator in reproducing kernel Hilbert spaces (RKHS), where the penalties enforce both smoothness and sparsity on the functional estimator. We also show that the excess prediction risk of our estimator is minimax optimal under this general model setting. Our analysis reveals an interesting phase transition phenomenon and the optimal excess risk is determined jointly by the sparsity and the smoothness of the functional regression coefficients.

Wednesday, December 2 at 4:00 PM in Zoom