

STP 598: Statistical Inference for Functional Data

Instructor: John Fricks

Spring 2023 TTh 12:00-1:15

Functional Data Analysis (FDA) is the area of statistics concerned with data which consists of continuous, smooth functions. In this course, we will study statistical inference techniques for such data, such as functional linear regression, functional ANOVA, and functional PCA. In addition, we will learn to fit ordinary differential equation models to data using the framework of FDA—an area also known as Dynamic Data Analysis. The approach will be both theoretical and computational with extensive use of real data sets.

Textbooks:

- Piotr Kokoszka and Matthew Reimherr. *Introduction to functional data analysis*. CRC Press, 2017.
- Ramsay, J. O., G. Hooker, and S. Graves. *Functional data analysis with R and MATLAB*. Springer, 2009.