



Departamento de
Estadística e
Investigación Operativa

Conferencia Marc Vidal 27 Sept. IMAG Functional Data Analysis for Complex Neuroscientific Data

25/09/2024

El viernes 27 de septiembre de 2024, a las 11:30
horas, en el seminario I del IMAG

Abstract: Neurophysiological monitoring techniques generate data that is both abundant and complex, typically reflecting brain processes across spatial and temporal dimensions. This data often spans multiple time points (longitudinal) and various experimental conditions. These characteristics naturally give rise to functional or multivariate functional data, which are becoming increasingly prevalent in modern neuroscience

research. I will review various applications of functional data in neuroscience, exploring how complexity introduces intricate relationships between subsets of data that go beyond the capabilities of traditional regression models.

Additionally, since brain data is embedded within geometrical structures ranging from simple to highly sophisticated forms, I will also discuss how functional data analysis can be adapted to handle these geometries, enabling more accurate modeling of brain processes across spatial and temporal scales.

