Séminaire de Probabilités et Statistique

Mardi 20 Novembre à 14h00
Laboratoire Dieudonné
Salle de conférence - LJAD

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Statistical models for life course data analysis
Joint work with Donatelo Telesca et Ross Matsueda

A major aim of life course data analysis is to describe the within- and between-individual variability in a behavioral outcome, such as crime or drug use. Popular methods for analyzing individual behavioral trajectories – group-based trajectory and growth mixture models – rely on a combination of growth curve and mixture modeling. Applications of these methods have been increasingly popular with criminologists and developmental psychologists, and are quickly expanding to other areas such as clinical medicine and public health. Most often, these applications seek to identify distinct trajectory patterns. In this talk, I will briefly describe these traditional statistical modeling approaches to life course data analysis, and summarize observations on statistical practice. I will then present an alternative statistical model, Unimodal Curve Registration (UCR) that describes individual criminal careers via individual-specific phase and amplitude departures from the unimodal population age-crime curve. I use two data sets – (a) on antisocial behavior from Montreal Longitudinal and Experimental Study and (b) on self-reported counts of yearly marijuana use from the Denver Youth Survey – to illustrate the statistical models discussed.