

Chilean Probability Seminar

Speaker: María Clara Fittipaldi, Facultad de Ciencias, Universidad Nacional Autónoma de México, México.

Title: On Multitype Branching Processes with Interactions.

Abstract: Motivated by the stochastic Lotka-Volterra model, we introduce continuous-time discrete-state interacting multitype branching processes (both through intratype and intertype competition or cooperation). We show that these processes can be obtained as the sum of a multidimensional random walk with a Lamperti-type change proportional to the population size; and a multidimensional Poisson process with a time-change proportional to the pairwise interactions. We define the analogous continuous-state process as the unique strong solution of a multidimensional stochastic differential equation. Finally, we prove that a large population scaling limits of the discrete-state process correspond to its continuous counterpart. In addition, we show that the continuous-state model can be constructed as a generalized Lamperti-type transformation of multidimensional Lévy processes. Joint work with Sandra Palau (IIMAS-UNAM, México).

El enlace para conectarse al seminario es:

Unirse a la reunión Zoom

<https://reuna.zoom.us/j/84521834914?pwd=OTZ6Y0NWM3pYTGtTbEt3c0luTG96UT09>

ID de reunión: 845 2183 4914

Código de acceso: 997973

Wednesday, October 26, 2022, 16:15 hrs (Chilean time).

