

## Chilean Probability Seminar

**Orador:** Oliver Kelsey (University of Durham)

**Título:** Selection principles for the N-BBM and the Fleming-Viot particle system.

**Resumen:** The selection problem is to show, for a given branching particle system with selection, that the stationary distribution for a large but finite number of particles corresponds to the travelling wave of the associated PDE with minimal wave speed. This had been an open problem for any such particle system.

The N-branching Brownian motion with selection (N-BBM) is a particle system consisting of  $N$  independent particles that diffuse as Brownian motions in  $\mathbb{R}$ , branch at rate one, and whose size is kept constant by removing the leftmost particle at each branching event. We establish the following selection principle: as  $N \rightarrow \infty$  the stationary empirical measure of the  $N$ -particle system converges to the minimal travelling wave of the associated free boundary PDE. Moreover we will establish a similar selection principle for the related Fleming-Viot particle system with drift  $-1$ , a selection problem which had arisen in a different context.

We will discuss these selection principles, their backgrounds, and some of the ideas introduced to prove them.

This is based on joint work with Julien Berestycki.

El enlace para conectarse al seminario es:

Unirse a la reunión Zoom

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

**Modalidad híbrida en la sala Multimedia CMM, Beauchef 851, Torre Norte Piso 6.**  
**Miércoles 09 de octubre 2024 a las 16:15 hrs.**

