

## SEMINARIO SISTEMAS DINÁMICOS DE SANTIAGO

**EXPOSITOR(A):** Borys Kuca (Jagiellonian University, Polonia)

**TÍTULO:** *Multiple ergodic averages along polynomials for systems of commuting transformations*

**RESUMEN:** The last 50 years have seen tremendous activity at the interface between ergodic theory, combinatorics and number theory that started with Furstenberg's dynamical proof of the Szemerédi theorem from the 1970s. The goal of this line of research has been to prove new multiple recurrence results and then deduce combinatorial corollaries. To achieve this, one wants to understand the limiting behaviour of relevant multiple ergodic averages. Of particular interest are averages of commuting transformations with polynomial iterates: they play a central role in the polynomial Szemerédi theorem of Bergelson and Leibman. While their norm convergence has been established in a celebrated paper of Walsh, little more has been known for a long time about the form of the limit. In this talk, I will present some recent results on the limits of such averages obtained jointly with Nikos Frantzikinakis and explain how they can be used to answer a number of previously intractable problems at the intersection between ergodic theory and combinatorics.

**DÍA / HORA:** Lunes 15 de enero, 2024 / 4:30 PM - 5:30 PM

**LUGAR:** Sala de Seminarios John Von Neumann CMM, piso 7, Torre Norte Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile (Beauchef 851)

