SOME MODELS IN DIFFERENTIAL EQUATIONS OF LANGUAGES COMPETITION DYNAMICS

María Victoria OTERO ESPINAR

Facultade de Matemáticas, Universidade de Santiago de Compostela, Spain

In this talk we analyze the evolution of the speakers of two languages that coexist in a geographic region through the study of the dynamics of models in differential equations.

Starting from the model adopted by Abrams and Strogatz (2003) in which the coexistence of two monolingual groups considered in competition is proposed, we analyze the dynamics of the speakers of each one of the languages with other models in which it is also contemplated the existence of individuals bilingual.

Taking into account some parameters such as the similarity between the two languages, the analysis of the model allows to deduce the several possible dynamics among which are the extinction of one of them, the existence of stable points of equilibrium of languages and bilingualism.

REFERENCE

D.M. Abrams D.M. & S.H. Strogatz. 2003. "Modelling the dynamics of language death". *Nature*, 424:900.