



**Venerdì 20 Maggio**  
**Aula Magna, ore 14:30**

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## **Statistical physics of language dynamics**

Language dynamics is an emerging field that focuses on all processes related to the emergence, evolution and extinction of languages. Recently the study of the self-organization and evolution of language and meaning has recently led to the idea that a community of language users can be seen as a complex dynamical system that collectively solves the problem of developing a shared communication framework through the back-and-forth signaling between people. In this talk I'll review some of the progresses made in the last few years and highlight potential future directions for the research in this area. I'll discuss in particular several examples corresponding to the early stages of the emergence of a language, namely the emergence of a common lexicon and the emergence of a shared set of linguistics categories. I'll point out how synthetic modeling has nowadays reached sufficient maturity to contribute significantly to the ongoing debate in cognitive science. For instance it has been recently possible to reproduce in a numerical model the outcomes of an important experimental survey, the so-called World Color Survey (WCS). In addition new experimental frameworks are becoming progressively available. Finally I'll discuss the crucial issue in linguistics of whether structures of languages we adopt are the outcome of an individual-based process of optimization or rather the result of a complex socially-driven cultural negotiation. I'll argue that a general scenario in language dynamics could be such that shared linguistic conventions would not emerge as attractors, but rather as metastable states.