Math & Brain seminars

Matematica e Cervello

Thursday 17/04/25 - 17:30
Room 1AD100

Dott.ssa Ambra Ferrari

Marie Skłodowska-Curie Postdoc Fellow, CIMeC, University of Trento (ambrafer.github.io)

The Bayesian Mind: Perceiving the World is an Inference Problem

How do we perceive the world starting from ambiguous and noisy signals? The surprising answer is that the brain does not simply "register" reality but actively constructs it, combining our prior knowledge with the sensory evidence we receive from the environment. This process can be elegantly modelled using Bayes' theorem: perception emerges as probabilistic inference. In this seminar, we will explore how the human mind behaves like a "Bayesian statistician". Using concrete examples from computational cognitive science, we will see that prior expectations crucially shape human cognition.

Organizers

S. De Marchi, W. Erb, M. Formentin, V. Franceschi, F. Marchetti, R. Monti, F. Rinaldi