

# FONDATION MAISON DU BRÉSIL

## IV Cycle de Conférences



30 Mars 2016 - Salle de Réunion - 20h30

### What is Information?

Antonio Campello \**Postdoctorant à Télécom Paristech et boursier FAPESP*

The digital revolution has hugely impacted people's life and perception of information. The objective of this exposition is to discuss some theoretical ways of quantifying and measuring information in different situations. We will present the basic philosophy of Information Theory, a field of research born in the 40s that entails an interplay between mathematics, engineering and computer science. We will particularly discuss how several mathematical theories seemingly inapplicable have turned into a crucial element to develop modern communication devices, from modems to the 5G technology.

### Application of Mathematics in Economics

Jérôme Bau \**Etudiant en Mathématiques Appliquées, Statistique et DataScience à l'ENSAE/Humboldt University*

Commonly, statistics and mathematics are not the first thing that comes to mind when thinking of economics. In modern economic research, however, we find more and more opportunities to apply advanced mathematics, data science, and statistics to model the interaction and behavior of different decision makers. Using concrete examples of behavioral economics and applied microeconomics I would like to discuss the importance of mathematics in economics while exploring possible boundaries and risks

### Identifying proteins in biological samples using computational techniques

Diogo Lima Borges \**Postdoctorant en Biologie Computationnelle à l'Institut Pasteur et boursier CNPq*

The study of protein structures and interactions is an important area of development for understanding the function of proteins. However, this is also an area of great experimental challenge, due to the inherent atomic complexity of proteins. Nowadays, there are many techniques to elucidate the protein structure, however most of them requires a computational analyses to understand how proteins interact. Here, I present SIM-XL, a software pioneer in many ways, capable for identifying proteins analyzed by mass spectrometry and thus ultimately aiding in structural characterization and in determining protein-protein interactions. This software uses pattern recognition strategies to address a bottleneck in protein modeling and protein-protein interaction. As such, various fields related to biology and biotechnology suffer an immediate benefit from this study, and other areas, say, the development of new drugs, are indirectly benefited as well.

### Organisation

Fondation Maison du Brésil  
Comité des Résidents de la Maison du Brésil  
(Gestion 2015/2016)  
Soutien: APEB-FR

\*NOUS VOUS INVITONS À BOIRE UN VERRE D'AMITIÉ À LA FIN DU CYCLE.