

Syllabus Topics in Game Theory : *Games and Information* (Rome February 2020, Jérôme Renault)

The lectures will discuss several aspects of the role of information in strategic interactions. The emphasis will be on concepts and simple examples, as well as models and results.

Lecture 1 : How to model information in games? The single-player case, the notion of belief hierarchies, the universal belief space, Bayesian games. The value of information may be negative. An example of informational cascade.

Lectures 2 and 3 (at least) : Strategic use of information. Moving beliefs : the splitting lemma, sender-receiver games and Bayesian persuasion (Information Design). Correlated Equilibria.

Lectures 4 and 5 : Computing the value of information : repeated games with incomplete information, long information design.

A few related references :

Aumann R.J. and M. Maschler : Repeated games with incomplete information, M.I.T. Press, 1995.

Forges, F. : Games with incomplete information : from repetition to cheap talk and persuasion. Econometric Society lectures 2019.

Kamenica, E. Gentskow M. : Bayesian Persuasion. American Economic Review, 101, 6, 2011.

Laraki R., Renault J. and Sorin, S : Mathematical Foundations of Game Theory, Springer Universitext 2019.

Maschler M., Solan E. and S. Zamir : Game Theory, Cambridge University Press, 2013.

Mertens, J.F. and S. Zamir : Formulation of Bayesian analysis for games with incomplete information. International Journal of Game Theory, 14, 1-29, 1985.

Koessler F., Laclau M., Renault J. and T. Tomala : Long information design. Preprint HALshs-02400053, 2019.

Zamir, S. : Repeated games of incomplete information : zero-sum. Handbook of Game Theory with Economic Applications, Aumann and Hart eds., 1, 109-154, 1992.