Further Topics in Statistics and Probabilities

Christina Pawlowitsch

It is my pleasure to welcome everybody back and to meet you in the class room this year.

Please note that we start this class in the second week of the semester (and not in the third week as usually). In exchange, there are no meetings of this class in the week of October 8th (the week right after the fall break).

Please check this page regularly as new information about homework assignments will be published here in the course of the semester.

Group 1:
Thursday, 18h–19h30, Assas, 505, and
Friday, 12h–13h30, Assas 314; starting: September 30th; no meetings October 11 and 12.

Group 2 (CMI EFiQuaS):
Friday, 14h–17h, salle Europe, ISIT, 39 bis rue d'Assas; starting October 1st; no meeting October 12.

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In this class, we are going to review the fundamental concepts of probability theory and apply them to problems in mathematical economics. We are going to discuss in particular models of interactive knowledge and belief revision as they have been introduced by Robert Aumann's 1976 article "Agreeing to disagree."

Evaluation for this class is based on:

- your written homework assignments,

- your participation during the sessions, and

- your term paper.

Program

Session 1: Modeling information and beliefs about events (Aumann's 1976 model) as a door into the fundamental concepts of probability theory (probability spaces, σ-algebras, random variables, Bayes' Law).

Session 2: Continued.

Session 3: Aumann's (1976) result on common knowledge and agreement

Session 4: Continued.

Session 5:

Session 6:

Session 7:

Session 8:

Session 9:

Session 10:

References

[1] Aumann, Robert J. 1976. "Agreeing to Disagree." *The Annals of Statistics* 4, 1236–1239.

[2] Geanakoplos, John and Herakles Polemarchakis. 1982. "We can't disagree forever." *Journal of Economic Theory* 28, 192–200.

[3] Sebenius, James K. and John Geanakoplos. 1983. "Don't bet on it : contingent agreements with asymmetric information." *Journal of the American Statistical Association* 78 (382), 424–426.

[4] Savage, L. 1954. *The Foundations of Statistics*. New York: Wiley.

[5] Pawlowitsch, C. 2020. *Dialogues Aumanniens*. Working Paper.

[6] Williams, David. 1991. *Probability with Martingales*. Cambridge, UK: Cambridge University Press.