MathEcoMed Workshop

Mathematics and Economics around the Mediterranean

June 22–23, 2026
Luiss University, Viale Romania campus, Rome
Room: Aula Toti

Abstracts

Marta Leocata *(Luiss University)*

Title: Optimal Policies for Environmental Assets under Spatial Heterogeneity and Global Awareness

Joint with E. Augeraud-Véron, D. Ghilli, F.Gozzi

In this talk we present a stochastic model for the management of environmental assets in a spatial setting where local authorities act non-cooperatively. A central feature of the model is that welfare depends not only on the local environmental asset, but also on the aggregate environmental quality.

We first analyze the problem from the perspective of an N-player stochastic differential game and characterize both open-loop and closed-loop Nash equilibria in explicit form. We then investigate the mean field limit as the number of players tends to infinity, proving convergence of the N-player game to a Mean Field Game.

We also study the cooperative benchmark, formulating and solving the problem of a social planner. Comparing the decentralized equilibria with the socially optimal allocation highlights the inefficiencies induced by non-cooperative behavior. Finally, we characterize the Pigouvian tax that restores efficiency by aligning the decentralized closed-loop equilibrium with the social optimum.

Charles Bertucci *(CEREMADE, CNRS, Université Paris Dauphine–PSL)*

Title: Correlated equilibria in mean field games

In this talk, I will present the standard notion of correlated equilibria, in the context of mean field games. I will explain why such equilibria naturally arise in several situations and discuss some of their properties.

Jérôme Renault *(Toulouse School of Economics)*

Title: A Folk Theorem for finitely repeated games with signals

Joint with J. Hörner.

We provide a Folk theorem for finitely repeated games with imperfect public monitoring. Any feasible and individually rational payoff vector can be approximated by sequential equilibrium payoffs as the length of the game grows. The result holds under a full-dimensionality assumption on the set of feasible payoffs.

Hlafo Alfie Mimun *(John Cabot University)*

Title: Best-Response Dynamics in Two-Person Random Games with Correlated Payoffs

Joint work with M. Quattropani and M.Scarsini

We consider finite two-player normal form games with random payoffs. Player A's and Player B's payoffs are correlated, allowing for varying degrees of alignment or conflict of interests. We study the behavior of best-response dynamics in such games and analyze how payoff correlation affects convergence properties and the structure of attractors.

Debora Di Gioacchino *(Sapienza University of Rome)*

Title: Private Health Insurance and Unmet Medical Needs: A Political Economy Analysis

Joitn with C. Andresciani and L. Sabani.

This paper revisits the "decongestion effect" argument, which holds that expanding private health insurance can alleviate pressure on public healthcare systems and improve access for lower-income individuals. We analyze this issue within a political economy framework where heterogeneous agents vote on public healthcare provision while deciding whether to purchase supplementary private insurance.

We show that the expansion of private insurance may reduce political support for public healthcare financing, potentially increasing unmet medical needs among vulnerable populations. The analysis highlights the trade-off between efficiency gains from reduced congestion and the erosion of solidarity in publicly funded healthcare systems.

Michalis Deligiannis *(Luiss University)*

Title: Dynamic Wholesale Pricing under Censored-Demand Learning

Joint with M.Scarsini and X. Venel

This paper studies dynamic wholesale pricing and ordering in a two-tier supply chain where firms share point-of-sale (POS) data and learn about demand from censored demand data. When stockouts occur, unmet demand is unobserved, so the retailer's order quantity affects not only current profits but also the informativeness of future demand signals. This creates a strategic interaction between pricing, ordering, and learning: the manufacturer can influence the pace of learning through wholesale prices, whereas the retailer internalizes the effect of inventory decisions on future information.

We analyze a finite-horizon dynamic game in which a manufacturer sets a wholesale price, the retailer then chooses an order quantity, demand is realized, and both firms observe sales. For

Weibull demand with a conjugate prior, we extend a dimensionality-reduction approach from single-agent inventory learning models to a strategic supply-chain setting and establish the existence of a Markov perfect equilibrium. For exponential demand, we further show that the equilibrium is unique and admits a recursive characterization.

Our numerical analysis shows that public learning can create conflicting incentives in the supply chain. In order to induce larger orders and reduce future censoring, the manufacturer chooses a wholesale price that is lower than a myopic benchmark. By contrast, because of its forward-looking ordering incentive, the retailer may prefer slower learning to avoid strengthening the manufacturer's future wholesale-pricing position.

Tristan Tomala *(HEC Paris)*

Title: Strategic Communication with Capacity-Limited Mediation

Joint with M. Le Treust.

We study games between a sender who observes a sequence of i.i.d. states and a receiver who chooses a corresponding sequence of actions. The sender and the receiver communicate via a set of physical messages of given cardinality. Communication is mediated: the sender reports states to a non-strategic and trustworthy encoder, which maps them into physical messages transmitted to a decoder, who recommends actions to the receiver.

Under this communication model, we characterize the expected joint empirical distributions of states and actions that can arise in equilibrium as the sequence length grows. We show that a distribution is achievable if and only if three conditions hold: incentive compatibility for the sender on average, pointwise incentive compatibility for the receiver, and an information constraint requiring that the mutual information between states and actions does not exceed the channel capacity.

Marie Laclau *(HEC Paris and CNRS)*

Title: Unmediated communication in games with (in)complete information: the 4-player case

Joint with H. Azacis and P. Vida.

We show that every rational correlated equilibrium of any finite game with complete information can be implemented without mediation in a repeated version of the game with four players. We also discuss extensions to games with incomplete information and connections with communication protocols in decentralized environments.

Doruk Cetemen *(Luiss University)*

Title: Pushing the Frontier

Joint with Alessandro Bonatti and Juuso Toikka.

This paper considers a novel search model in which discovery occurs when the process crosses an unknown threshold drawn from a prior distribution. We also consider various applications.

Eloisa Campioni *(Tor Vergata University of Rome)*

Title: Keeping the Agents in the Dark: Competing Mechanisms, Private Disclosures, and the Revelation Principle

Joint with A. Attar,T. Mariotti and A. Pavan

We study the design of market information in competing-mechanism games. We identify conditions under which sellers strategically choose to keep agents uninformed through private disclosure policies. We analyze the implications for equilibrium outcomes and revisit the validity of the revelation principle in environments with competing mechanisms and asymmetric information.