HAUSDORFF RESEARCH INSTITUTE
FOR MATHEMATICS

UNIVERSITÄT BONN

Workshop

"Mechanism Design and Information Design"

June 29 - July 3, 2026

organized by
Laura Doval, Andreas Kleiner

Abstracts

Ian Ball (Massachusetts Institute of Technology)

Competitive Sequential Screening (joint with Jan Knoepfle and Deniz Kattwinkel)

Abstract: We study competition between firms that contract with consumers before the consumers fully learn their product preferences. In a Hotelling duopoly, firms screen consumers by offering menus of option contracts. We characterize the unique equilibrium. Consumers select contracts from both firms. Each consumer is endogenously locked into the firm from which he chooses an option with a lower strike price. Lock-in yields inefficient consumption. Yet earlier contracting stiffens competition because less informed consumers are more homogeneous. Sufficiently early contracting raises consumer surplus relative to spot pricing—reversing the ranking under monopoly. Exclusive contracting further increases consumer surplus by intensifying competition.

Pia Ennuschat (Universitat Pompeu Fabra)

Targeted Information Design

Abstract: A monopolistic seller offers a product through a platform to partially informed consumers. The platform observes both consumers' prefer- ences and their existing information and decides how much additional information to disclose. I consider different objectives for the platform and show how the platform designs disclosure to shape the elasticity of demand depending on its objective. I characterize the set of feasible welfare outcomes and show that total surplus is maximized when the platform maximizes consumer surplus and decreases whenever the platform pursues any other objective, such as profit maximization.

Tan Gan (London School of Economics)

Screening for Choice Set

Abstract: We study a screening problem in which an agent privately knows which actions or technologies are feasible and can disclose only a subset to a principal. Once disclosed, feasible options are verifiable and their payoff consequences are publicly known, so private information concerns feasibility rather than payoffs, misreporting restricts the principal's choices directly rather than distorting

her beliefs. Assuming feasible sets are ordered by inclusion, we establish a simple characterization of the optimal mechanism, where the principal either behaves as if there is no asymmetric information or locally provides no reward for better proposals. We derive comparative statics and illustrate the framework in applications to managing persuasion, action elicitation, and production-technology elicitation.

Nima Haghpanah (Yale University)

Selling Evidence Bit by Bit

Abstract: We consider a seller who sells an asset on a competitive market. The asset's value is binary and initially unknown to all. The seller can, prior to the sale, obtain hard information from an intermediary about the asset's value. Whether information is obtained is unobservable, but the seller can disclose any obtained information to the market to affect the sale price. The intermediary designs and prices the information to maximize his revenue guarantee across equilibria. We show that the intermediary benefits from "splitting" the information into multiple signals and characterize the optimal test. This test corresponds to a "Swiss cheese" model of failure with i.i.d. signals and conclusive good news.

Ravi Jagadeesan (Stanford University)

Mechanism Design with Collusion: Welfare Guarantees under Property Rights (joint with Ilya Segal and Alex Tordjman)

Abstract:

Jan Knoepfle (Queen Mary University of London)

Who and How? Adverse Selection and Flexible Moral Hazard (joint with Henrique Castro-Pires and Deniz Kattwinkel)

Abstract: We characterize incentive compatible mechanisms in environments with hidden types and flexible hidden actions. Our approach introduces extended recommendation schedules that specify prescribed actions also off-path, after misreports. This approach yields a tractable and complete characterization of incentive compatibility, which includes a generalized integral monotonicity condition capturing the interaction between adverse selection and moral hazard. We illustrate the usefulness of the characterization in a range of applications, including labor contracts, optimal taxation, and investor-entrepreneur contracting.

Nenad Kos (Bocconi University)

Inference from Outcomes in the Market for Lemons (joint with Francesc Dilme)

Abstract:

Elliot Lipnowski (Yale University)

Agreeing to Implement (joint with Marina Halac and Doron Ravid)

Abstract: A set of agents play a game. What outcomes can a principal guarantee? We propose *agreeable implementation*, bridging best-case Nash equilibrium and worst-case rationalizability. Before play, the principal suggests a product set of strategies. Agreeable agents follow the suggestion if self-enforcing. All agents understand this and are rational with common belief of rationality. Evaluating implementable suggestions by their worst case, the principal gets her best Nash payoff when all agents are agreeable, and her worst rationalizable payoff when all are disagreeable. We characterize optimal suggestions in supermodular environments and study applications to networks, team incentives, mechanism design, and uncertain agreeability.

Paula Onuchic (London School of Economics)

Separating the Wheat from the Chaf

Abstract: We study a reputational cheap-talk environment in which a judge, who is privately and imperfectly informed about a state, must choose between two speakers of unknown reliability. Exactly one speaker is an expert who perfectly observes the state, while the other is a quack with no information. Both speakers seek to be selected, while the judge wishes to identify the expert. We show that, quite generally, there is an equilibrium in which the expert is honest, yet the judge favors more extreme signals. This bias toward extremism does not induce exaggeration by the expert, but instead sustains truthful communication. The quack strategically mimics the expert's speech, and sometimes panders to the judge's prior. We show that learning in this environment exhibits an "information begets information" property: judges with more precise private information are more likely to identify the expert and learn the true state, implying that exposure to competing sources of uncertain reliability may amplify informational inequality across audiences.

Eduardo Perez Richet (Sciences Po)

Non-market screening with investment

Abstract: Rewards (e.g., prizes, labels, money) are often allocated to agents based on a measured characteristic or aggregate—commonly called a score. This paper studies how a principal should optimally allocate rewards when: (i) the underlying characteristic and reward are complements in her preferences, and (ii) agents can strategically invest to enhance their scores (and, to some extent, manipulate them). Our main result shows that, in a broad class of environments, optimal mechanisms take the form of simple cutoff rules that grant the highest reward to agents whose scores exceed a specified threshold while offering nothing below this threshold. Notably, intermediary rewards and randomization provide no additional benefit to the principal. This finding establishes a stronger theoretical foundation and provides a potential explanation for the prevalence of binary "pass or fail" rules in environments where agents can strategically invest in response to screening mechanisms.

Agathe Pernoud (University of Chicago)

Bundling against Learning (joint with Frank Yang)

Abstract: A monopolist sells multiple goods to an uninformed buyer. The buyer chooses to learn any one-dimensional linear signal of their values for the goods, anticipating the seller's mechanism. The seller designs an optimal mechanism, anticipating the buyer's learning choice. In a generalized Gaussian environment, we show that every equilibrium has vertical learning where the buyer's posterior means

are comonotonic, and every equilibrium is outcome-equivalent to nested bundling where the seller offers a menu of nested bundles. In equilibrium, the buyer learns more about a higher-tier good, resulting in a higher posterior variance on the log scale.

Marek Pycia (University of Zurich)

Mechanism Design with Information Leakage (joint with Samuel Häfner and Haoyuan Zeng)

Abstract: We study the design of mechanisms—e.g., auctions—when the designer does not control information flows between mechanism participants. A mechanism equilibrium is leakage-proof if no player conditions their actions on leaked information; a property distinct from ex-post incentive compatibility. Only leakage-proof mechanisms can implement social choice functions in environments with leakage. Efficient auctions need to be leakage-proof, while revenue-maximizing ones not necessarily so. Second-price and ascending auctions are leakage-proof; first-price auctions are not; while whether descending auctions are leakage-proof depends on tie-breaking.

Fedor Sandomirskiy (Princeton University)

Delegation in Strategic Environments and Equilibrium Uniqueness (joint with Ben Wincelberg)

Abstract: We ask when a normal-form game yields a single equilibrium prediction, even if players can coordinate by delegating play to an intermediary such as a platform or a cartel. Delegation outcomes are modeled via coarse correlated equilibria (CCE) when the intermediary cannot punish deviators, and via the set of individually rational correlated profiles (IRCP) when it can. We characterize games in which the IRCP or the CCE is unique, uncovering a structural link between these solution concepts. Our analysis also provides new conditions for the uniqueness of classical correlated and Nash equilibria that do not rely on the existence of dominant strategies. The resulting equilibria are robust to players' information about the environment, payoff perturbations, pre-play communication, equilibrium selection, and learning dynamics. We apply these results to collusion-proof mechanism design.

Ilya Segal (Stanford University)

The Limits of Auctions under Ex-Ante Collusion (joint with Ravi Jagadeesan and Alex Tordjman)

Abstract: We study revenue-maximizing auction design when bidders can collude *ex ante*—i.e., before learning their values and before each bidder decides whether to participate in the auction. We show that bidders' ex-post private information about values does not preclude them from colluding efficiently, and as a result, the seller cannot guarantee a higher expected revenue than from posting an optimal price and rationing the good. However, a posted-price mechanism leaves the seller vulnerable to inefficient collusion. Rather than taking a stance on what forms of collusion are feasible, we construct mechanisms that guarantee the non-collusive expected revenue of an optimal posted price against a broad range of forms of ex-ante collusion—including by rings comprised of subsets of bidders, rings that can commit to punish bidders who refuse to join, and rings of which some bidders may be unaware. We show that achieving such a guarantee requires protecting bidders' ex-ante expected utilities against all such forms of collusion—a property that we term strong collusion robustness. With symmetric bidders, our strongly collusion-robust mechanism simply combines a posted price with a first-price knockout auction conducted by the seller on behalf of the bidders. Our mechanisms are max-min optimal for a range of collusion models.

Vasiliki Skreta (UT Austin and UCL)

Audience Design with Transfers and Ordeals (joint with Suraj Malladi)

Abstract: We provide a general yet tractable model to derive revenue-optimal mechanisms in settings with allocation-dependent externalities. Such externalities are present in settings ranging from concerts and parties to fashion items and software to college and workplace experiences. Our framework allows for transfers and for screening through ordeals, such as waiting in line, joining a fan club, or completing lengthy applications. We elucidate when and how such seemingly wasteful actions enhance price discrimination in the presence of externalities. Ordeals effectively filter out undesirable customers or members in some settings. In other settings, ordeals can be leveraged to allocate to desirable consumers who may have low purchasing power. We find conditions under which optimal mechanisms create two classes of customers: those who pay with money and those who pay with effort—a phenomenon we call ordeal discrimination.

Maren Vairo (Wharton School)

Information Design and Screening without Transfers

Abstract: We study a principal-agent problem without transfers in which the principal jointly controls the information the agent receives about a payoff-relevant state and the set of actions he may take. The agent has private information about his preferences, while the state is initially unknown. Under public communication, the principal commits to a common information policy about the state and a message-contingent set of feasible actions. Under a regularity condition, the optimal policy combines censorship of information with interval delegation: the principal pools states in which the agent is given greater discretion and reveals states in which the action set is more tightly restricted. Thus, information and flexibility act as substitutes. Under private communication, the principal elicits the agent's type before the state-contingent part of the mechanism is implemented, effectively committing to a type-dependent joint distribution over actions and the state. The responsiveness of the action to the state then serves as an additional screening instrument through which private communication can improve upon the public benchmark. In a tractable uniform case, the private optimum has a single-cutoff structure and admits a straightforward comparison with standard delegation. We apply the analysis to monopoly regulation, where a regulator jointly controls demand-based price discrimination and price caps.

Kai Hao Yang (Yale University)

Stochastic Optimization and Coupling (joint with Frank Yang)

Abstract: We study optimization problems in which a linear functional is maximized over probability measures that are dominated by a given measure according to an integral stochastic order in an arbitrary dimension. We show that the following four properties are equivalent for any such order: (i) the test function cone is closed under pointwise minimum, (ii) the value function is affine, (iii) the solution correspondence has a convex graph with decomposable extreme points, and (iv) every ordered pair of measures admits an order-preserving coupling. As corollaries, we derive the extreme and exposed point properties involving integral stochastic orders such as multidimensional mean-preserving spreads and stochastic dominance. Applying these results, we generalize Blackwell's theorem by completely characterizing the comparisons of experiments that admit two equivalent descriptions—through instrumental values and through information technologies. We also show that these results immediately yield new insights into information design, mechanism design, and decision theory.
