



HHL

LEIPZIG
GRADUATE SCHOOL
OF MANAGEMENT

PROF. Dr. Pierfancesco La Mura

Chairholder Chair of Economics and Information Systems

HHL Leipzig Graduate School of Management
Jahnallee 59, 04109 Leipzig, Germany

T +49 341 9851-844
plamura@hhl.de

Academic Education

- 1994-1999 Ph.D. in Economic Analysis and Policy, Graduate School of Business, Stanford University, California, USA
- 1992-1996 Doctorate in Economic Sciences, Bocconi University, Milan, Italy
- 1987-1992 Laurea in Discipline Economiche e Sociali, Bocconi University, Milan, Italy

Professional Experience

- since 2002 Professor at the Chair of Economics and Information Systems, HHL Leipzig Graduate School of Management, Leipzig, Germany
- 2001-2002 Postdoctoral Fellow at the Institute for Advanced Studies; Lecturer at the Economics Department, The Hebrew University of Jerusalem, Israel
- 1999-2000 Postdoctoral Fellow at the Computer Science Department, Graduate School of Business, Stanford University, California, USA
- 1997-1999 Research Assistant for Professor Yoav Shoham, Computer Science Department, Stanford University, USA
- 1997-1998 Lecturer in Applied Game Theory at the Summer School, Central European University, Budapest, Hungary
- 1992-1993 Co-lecturer in Microeconomics, History of Economic thought and Mathematical Economics, Bocconi University, Milan, Italy



HHL

LEIPZIG
GRADUATE SCHOOL
OF MANAGEMENT

Honors and Awards

1992 Top Thesis Award "Dignita' di stampa", Bocconi University,
Milan, Italy

Research Interests

Market Design and Regulation

- _ Electronic markets
- _ Energy markets
- _ Mechanism design

Foundations of Game and Decision Theory

- _ Representations
- _ Solutions
- _ Algorithms

Information Theory

- _ Preference estimation
- _ Quantum information
- _ Artificial Intelligence

Research Projects

In Cooperation with Deutsche Bundesbank (2017-2020):

- "Consequences of quantum-assisted trading on the stability of financial markets" and
- "To explore the occurrence and impact of classical, but quantum-like interference effects (e.g. regret and rejoice) in financial decisions"



Publications

Research Monographs

- P. La Mura: Ph.D. Thesis "Foundations of Multi-Agent Systems" Stanford University, Graduate School of Business, 1999.
- "Linguaggio, comunicazione e potere", Bocconi University, 1996.

Book Chapter

- Carena, Edgardo Di Nicola, La Mura Pierfrancesco, Rebucci, Alesandro (2019), Blockchain technology and government applications: A proposal for a Global Patent Office The Economics of Fintech and Digital Currencies. Antonio Fatás, Ed., Centre for Economic Policy Research.
- P. La Mura (2018), Contextual Mechanism Design. In Social Design: Essays in Memory of Leonid Hurwicz. W. Trockel (Ed.), Springer.

– Peer Reviewed Journal Articles

- P. La Mura: "Using Phobos as a passive launch system for solar system spacecraft", International Astronautical Congress, The Cyber Space Edition, October 12-14, 2020.
- P. La Mura and G. Scarpa: "Quantum-Assisted Interferometry in Space: Real-Time Coherence in Space Telescope Arrays with Shared Quantum States", International Astronautical Congress, Bremen, Germany, October 1-5, 2018.
- P. La Mura: "Three Types of Robot Builder for the Unsupervised Construction of Mars Habitats", International Astronautical Congress, Adelaide, Australia, September 25-29, 2017.
- Adam Brandenburger, Pierfrancesco La Mura: Team decision problems with classical and quantum signals, in Philosophical Transactions of the Royal Society A, **2016, Volume 374, issue 2058.**



- Pierfrancesco La Mura, Philipp Gmehling: A Bayesian inference model for the credit rating scale, in *The Journal of Risk Finance*, 2016, Vol. 17 Issue: 4, pp.390-404
- Pierfrancesco La Mura, A double-slit experiment for non-classical interference effects in decision making, In: *Topics in Cognitive Science*, 6 (2014), 58–62.
- P. La Mura, B. Schwetzler, A. Wilms, M. Rapp “The Certification Hypothesis of Fairness Opinions”, *International Review of Law and Economics*, 31 (2011) 4, 240-248, 2011.
- P. La Mura, “Il Canto dell’Odio”, *Journal of Italian Translation*, 2010.
- P. La Mura: Projective Expected Utility, *Journal of Mathematical Psychology*, Vol 53(3), 2009.
- P. La Mura: “Correlated Equilibria of Classical Strategic Games with Quantum Signals”, Special issue on the foundations of quantum information, *International Journal of Quantum Information*, 2 (2004) 4.

Peer Reviewed Proceedings

- Nataliya Demyanenko and Pierfrancesco La Mura: "Gamson-Shapley Laws - A Formal Approach to Political Coalition Formation", *Proceedings of the 26th World Congress of Political Science*, Lisbon, Portugal, July 25-29, 2020.
- P. La Mura: “An Information-Theoretic Description of Quantum Mechanics” in *Proceedings: TARK, Workshop “Quantum physics meets TARK”*, Groningen, The Netherlands, July 15, 2011.
- P. La Mura and E. Demidova: “Group Bargaining with Incomplete Information” in *Proceedings: The forth international conference on Game Theory and Management*, St. Petersburg, Russia, 28-30 June, 2010.
- P. La Mura: “Projective Expected Utility - A Subjective Formulation”, in *Proceedings: Theoretical Aspects of Rationality and Knowledge (TARK) Conference*, Stanford University, 6-8 July, 2009.



- P. La Mura: "Game Theory without Decision-Theoretic Paradoxes." in Proceedings: 1International Conference on Algorithmic Decision Theory, Venice, Italy, 21-23 October, 2009.
- P. La Mura: "Negotiation-Range Mechanisms: Exploring the Limits of Truthful Efficient Markets, Yair Bartal; Rica Gonen" in: Proceedings of the 5th ACM Conference on Electronic Commerce, New York, NY, USA, May 17-20, 2004, ed. by J. Breese, J. Feigenbaum and M. Seltzer, New York, NY: ACM Press, 2004.- pp. 1-8.
- P. La Mura: "Decision-Theoretic Entropy", in: Proceedings of the 9th Conference on Theoretical Aspects of Rationality and Knowledge (TARK-2003), Bloomington, Indiana, USA, June 20-22, 2003, ed. by J. Y. Halpern and M. Tennenholtz, New York, NY: ACM Press, 2003. pp. 35-44.
- P. La Mura: "Game Networks", in: Proceedings of the 16th Conference in Uncertainty in Artificial Intelligence (UAI) , Stanford University, Stanford, California, USA, June 30 - July 3, 2000, ed. by C. Boutilier and M. Goldszmidt, San Francisco, CA: Morgan Kaufmann, 2000. pp. 335-342.
- P. La Mura and Y. Shoham: "Expected Utility Networks", in: Proceedings of the 15th conference on Uncertainty in Artificial Intelligence (UAI '99), Stockholm, Sweden, July 30 - August 1, 1999, ed. by K. Laskey and H. Prade, San Francisco, CA: Morgan Kaufmann, 1999. pp. 366-373.
- P. La Mura and Y. Shoham: "Conditional, Hierarchical, Multi-Agent Preferences", in: Proceedings of the 7th Conference on Theoretical Aspects of Rationality and Knowledge (TARK-98), Evanston, IL, USA, July 22-24, 1998, ed. by I. Gilboa, San Francisco, CA: Morgan Kaufmann, 1998. pp.215-224.

Working Papers

- A. Casajus, P. La Mura: Null Players, Outside Options, and Stability, HHL Working paper No. 183, HHL Leipzig Graduate School of Management, Leipzig, April 2020.
- A. Brandenburger, P. La Mura, K. Steverson: Concurrence and Common Knowledge in a Neural Network, January 22, 2017.



- A. Brandenburger, P. La Mura: "Deriving the Qubit from Entropy Principles", Cornell University, New York, 2015.
- P. La Mura and A. Brandenburger: "Quantum Decision Theory", Cornell University, New York, 2011.
- P. La Mura and L. Swiatczak: "The Centipede Game in the Framework of Projective Expected Utility", 2010.
- P. La Mura: Expected Utility of Final Wealth and the Rabin Anomaly, HHL Working Paper 91. Leipzig: HHL Leipzig Graduate School of Management, 2009.
- P. La Mura, B. Schwetzler, M. Rapp, A. Wilms: The Certification Hypothesis of Fairness Opinions , HHL Working Paper 92, 2009 published on Social Science Research Network, <http://papers.ssrn.com/sol3/papers.cfm?>, 2009.
- P. La Mura and L. Swiatczak: "Markovian entanglement networks", HHL Working Paper 77. Leipzig: HHL Leipzig Graduate School of Management, 2007.
- P. La Mura and G. Olschewski: "Non-dictatorial social choice through delegation", HHL Working Paper 72. Leipzig: HHL Leipzig Graduate School of Management, 2007.
- P. La Mura: "Decision theory in the presence of uncertainty and risk", HHL Working Paper 68. Leipzig: HHL Leipzig Graduate School of Management, 2005.
- P. La Mura and M. Herfert: "Estimation of Consumer Preferences via Ordinal Decision-Theoretic Entropy", HHL Working Paper 64. Leipzig: HHL Leipzig Graduate School of Management, 2004.
- P. La Mura: "Correlated Equilibria of Classical Strategic Games with Quantum Signals", HHL Working Paper 61. Leipzig: HHL Leipzig Graduate School of Management, 2003.

Peer Reviewed Conference Papers / Conference Presentations

- P. La Mura: "Using Phobos as a passive launch system for solar system spacecraft", 71th International Astronautical Congress, The Cyber Space Edition, October 12-14, 2020.



- P. La Mura: "Quantum-Assisted Interferometry in Space: Real-Time Coherence in Space Telescope Arrays with Shared Quantum States", 69th International Astronautical Congress, Bremen, Germany, October 4, 2018.
- La Mura, Pierfrancesco: "Entangled economic behavior: 'hard' and 'soft' quantum effects in decisions and games", Workshop, University of Pécs, Pécs, Hungary, January 3, 2018.
- La Mura, Pierfrancesco: "Three Types of Robot Builder for the Unsupervised Construction of Mars Habitats", 68th International Astronautical Congress, Adelaide, Australia, September 25-29, 2017.
- La Mura, Pierfrancesco: The Conditional Shapley Value. Axiomatizations in Game Theory Workshop, University of Pécs. Pécs, Hungary, September 1, 2017.
- Pierfrancesco La Mura: "An Information-Theoretic Description of Quantum Mechanics"; Workshop "Quantum physics meets TARK", University Groningen, The Netherlands, July 15, 2011.
- Pierfrancesco La Mura, Adam Brandenburger: Quantum decision theory, 13th Conference on Theoretical Aspects of Rationality and Knowledge, Groningen, Netherlands, July 11-14, 2011
- Pierfrancesco La Mura: "Game theory without decision-theoretic paradoxes",
 - 2nd. Brazilian Workshop of the Game Theory Society, Sao Paulo, Brazil, July 29 – August 4, 2010.
- Pierfrancesco La Mura: "Game theory without decision-theoretic paradoxes", 32nd. Bosphorus Workshop on Economic Design, Bodrum, Turkey, July 3-10, 2010.
- Pierfrancesco La Mura: "Game Theory without Decision-Theoretic Paradoxes", 1st International Conference on Algorithmic Decision Theory, Venice, Italy, October 21-23, 2009.
- Pierfrancesco La Mura: "The Certification Hypothesis of Fairness Opinions", XXVI Annual Conference: European Association of Law and Economics, Rome, Italy, September 16-19, 2009.



- Pierfrancesco La Mura: "Group Bargaining with Incomplete Information", Logic, Game Theory and Social Choice (LGS 6) Conference, University of Tsukuba, Japan, August 26 - 29, 2009.
- Pierfrancesco La Mura: "Projective Expected Utility - A Subjective Formulation", Theoretical Aspects of Rationality and Knowledge (TARK) Conference, Stanford University, July 6-8, 2009.
- Pierfrancesco La Mura: "Optimal decentralization of multi-agent decisions", Economic Design Conference, Maastricht, The Netherlands, June 22-24, 2009.
- Pierfrancesco La Mura: "Projective expected utility", Quantum Interaction Conference (QI-2008), Oxford, UK, March 26- 28, 2008.
- Pierfrancesco La Mura: "Decision theory in the presence of quantum uncertainty", Economic Theory Workshop, Institute for Advanced Studies, Hebrew University of Jerusalem, Israel, March 2005.
- Pierfrancesco La Mura: "Decision theory in the presence of quantum uncertainty", Workshop on Quantum entanglement in physical and information sciences, Pisa, Italy, December 14-18, 2004.
- Pierfrancesco La Mura and Carmel Domshlak: "Game-theoretic entropy",
 - Sixth Conference on Logic and the Foundations of Game and Decision Theory (LOFT 6), Leipzig, Germany, July 16-18, 2004.
- Pierfrancesco La Mura and Mark R. Pearson: "Simulated Annealing of Game Equilibria: A Simple Adaptive Procedure Leading to Nash Equilibrium", International Workshop on The Logic and Strategy of Distributed Agents, Trento, Italy, December 14-19, 2000

Invited Talks

- La Mura, Pierfrancesco
Gamson-Shapley Laws: Bargaining Power in Coalition Politics and Bilateral Trade
University of Leipzig, Department of Sociology, February 3, 2021



- La Mura, Pierfrancesco
Gamson-Shapley Laws: Bargaining Power in Coalition Politics and Bilateral Trade
Johns Hopkins U., Carey School of Business Brown Bag Seminar,
November 5, 2020

- La Mura, Pierfrancesco
The case for a quantum internet in distributed space operations
 - Science Coffee of The European Space Agency, Online Talk,
July 17, 2020

- La Mura, Pierfrancesco
Games in context: an approach to context dependence in cooperative games
6th Workshop on Cooperative Game Theory in Business Practice
HHL Leipzig Graduate School of Management, Leipzig, Germany,
June 21, 2019

- La Mura, Pierfrancesco
Team decision Problems with classical and quantum Signals
5th Workshop on Cooperative Game Theory in Business Practice
HHL Leipzig Graduate School of Management
Leipzig, Germany, June 15, 2018

- La Mura, Pierfrancesco
 - Entangled economic behavior: 'hard' and 'soft' quantum effects in decisions and games, University of Bielefeld, Bielefeld, Germany, October 10, 2017

- La Mura, Pierfrancesco
The Conditional Shapley Value
4th Workshop on Cooperative Game Theory in Business Practice
HHL Leipzig Graduate School of Management
Leipzig, Germany, June 16, 2017

- La Mura, Pierfrancesco
Games with quantum signals | The Conditional Shapley Value
Max-Planck-Institut für Mathematik in den Naturwissenschaften,
Leipzig
Leipzig, Germany, June 29, 2016

- La Mura, Pierfrancesco
Team Decision Problems with Classical and quantum signals
3th Workshop on Cooperative Game Theory in Business Practice



HHL

LEIPZIG
GRADUATE SCHOOL
OF MANAGEMENT

HHL Leipzig Graduate School of Management
Leipzig, Germany, June 25, 2015

- La Mura, Pierfrancesco
Entangled Preferences
Amsterdam Quantum Logic Workshop
Amsterdam, The Netherlands, May 7-8, 2015

- La Mura, Pierfrancesco
Team Decision Problems with Classical and quantum signals
Amsterdam Quantum Logic Workshop
Amsterdam, The Netherlands, November 24-26, 2014

- La Mura, Pierfrancesco
Assessing chronological data from textual information
NYU Stern School of Business
New York, USA, October 24, 2014

- La Mura, Pierfrancesco
Deriving the qubit from the principles
Max-Planck-Institut für Mathematik in den Naturwissenschaften,
Leipzig
Leipzig, Germany, May 27, 2014
- La Mura, Pierfrancesco
"Dependence Logic: Theory and Applications"
Dagstuhl, Germany 11-15 February, 2013

- Pierfrancesco La Mura
"Quantum vs. Classical Memory"
City University of New York, November 12, 2010

- Pierfrancesco La Mura
"Decision theory in Hilbert spaces"
Dagstuhl Seminar on "The Semantics of Information"
Dagstuhl, Germany 6-11 June, 2010

- Pierfrancesco La Mura
 - "Non-Dictatorial Social Choice through Delegation"
 - Research Seminar for the doctoral program "The Economics of Innovative Change" (organized by Friedrich Schiller University of Jena and International Max-Planck Research School on Adapting Behavior in a Fundamentally Uncertain World), Jena, Germany, November 18, 2009

- Pierfrancesco La Mura



- "Game Theory without Decision-Theoretic Paradoxes"
- Theory Seminar of the Paris School of Economics, Paris School of Economics, Paris, France, October 30, 2009

Other Publications

- A. Brandenburger and P. La Mura, "Quantum-Assisted Load Balancing in Communication-Constrained Wide-Area Physical Networks". U.S. Patent No. 10,056,983, August 21, 2018.
- Pierfrancesco La Mura: Wenn die Lichtgeschwindigkeit nicht mehr ausreicht, in Frankfurter Allgemeine Zeitung, Nr. 153, p. 18, July 4, 2016.