Curriculum vitae

LEO FULVIO MINERVINI

PERSONAL DETAILS

First name: Leo Fulvio Family name: Minervini Nationality: Italian

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EDUCATION

PhD – University of Warwick, Warwick Business School (UK), 2011.

LL.M (Law and Economics), with distinction - University of Manchester (UK), 2003.

European Master in Law and Economics, cum laude - Erasmus University of Rotterdam (Netherlands), 2003.

Degree in Economics, cum laude - University of Urbino (Italy), 2000.

PRESENT POSITION

Senior researcher with tenure of Public Finance, *University of Macerata, Department of Economics and Law (Italy)*, since June 2008.

PAST ACADEMIC POSITIONS

Research fellow, University of Macerata, Department of Studies on Economic Development (Italy), November 2005 - May 2008.

RESEARCH INTERESTS

Public finance and economics; Public goods; Taxation; Economic regulation of public utilities; Economics of wireless communications; Airport economics; Regulatory authorities; Higher education.

TEMPORARY RESEARCH AFFILIATIONS

Visiting researcher, VTT Technical Research Centre, Oulu, Finland, April 2014.

Visiting researcher, Vilnius Gediminas Technical University, Vilnius, Lithuania, June 2012.

Articles in international journals

- "Fiscal Incentives for Energy Poverty in Italy: Bridging the Gap or Missing the Mark?" (with Alfonso Carfora and Giuseppe Scandurra), in *Energy Research and Social Science* (Anvur A-class journal), 2025, 104161, doi: 10.1016/j.erss.2025.104161.
- "Evolved Spectrum Usage Rights: A Catalyst for Liberal Spectrum Management Reform" (with William Webb and Arturas Medeisis), in *Telecommunications Policy* (Anvur A-class journal), 2024, 102715, doi: 10.1016/j.telpol.2024.102715.
- "Municipal Waste Management: A Complex Network Approach with an Application to Italy" (with Roy Cerqueti and Matteo Cinelli), in *Waste Management* (Anvur A-class journal), 2021, vol. 126, 597–607, doi: 10.1016/j.wasman.2021.03.035.
- "University Dropouts in Italy: Are Supply Side Characteristics Part of the Problem?" (with Lara Gitto and Luisa Monaco), in *Economic Analysis and Policy* (Anvur A-class journal), 2016, vol. 49, 108-116, doi:10.1016/j.eap.2015.12.004.
- "Coopetitive Business Models in Future Mobile Broadband with Licensed Shared Access (LSA)" (with Petri Ahokangas, Marja Matinmikko, Irina Atkova, Seppo Yrjölä and Miia Mustonen), in *EAI Endorsed Transactions on Cognitive Communications*, 2016, 16(7): e2, doi: 10.4108/eai.5-9-2016.151645.
- "Spectrum Management Reform: Rethinking Practices", in *Telecommunications Policy* (Anvur A-class journal), 2014, vol. 38(2), 136-146, doi:10.1016/j.telpol.2013.07.004.
- "Stalling Innovation of Cognitive Radio: The Case for Dedicated Frequency Band" (with Arturas Medeisis), in *Telecommunications Policy* (Anvur A-class journal), 2013, vol. 37(2-3), 108-115, doi:10.1016/j.telpol.2012.07.001.
- "Pluralistic Licensing" (with Oliver Holland, Luca De Nardis, Keith Nolan, Arturas Medeisis, Peter Anker, Fernando Velez, Marja Matinmikko and John Sydor), in *IEEE DySPAN 2012*, 33-41, doi:10.1109/DYSPAN.2012.6478113.
- "Emerging Technologies and Access to Spectrum Resources: The Case of Short-Range Systems", in *Communications and Strategies*, 2007, vol. 67, 107-125. [Reprinted in *Spectrum Law and Governance*, J. Ramakistaiah (Ed.), 2008, ICFAI, Hyderabad, A.P, Amicus Books, pp. 1-18.]

Articles in national journals

- "Lo spazio delle materie economiche nella formazione dei giuristi" [The Space of Economic Subjects in the Academic Training of Italian Graduates in Legal Studies] (with Paolo Polidori), in *Rivista di diritto finanziario* e scienza delle finanze, 2023, vol. LXXXII(1), 3-26.
- "The Selection of Regulators, or, the Political Economy of Regulation in Italy" (with Diego Piacentino), in *L'industria*, 2021, vol. XLII(1), 1–25, doi: 10.1430/98709.
- "Sergio Steve e Duncan Black: gli studi e l'amicizia" [Sergio Steve and Duncan Black: Their Studies and Friendship], in *Apertacontrada*, 2021, open access, https://www.apertacontrada.it/wp-content/uploads/2021/06/Minervini.pdf.
- "The Performance of European Full Service Airlines after Liberalisation: An Econometric Analysis" (with Lara Gitto), in *Rivista di politica economica*, special issue on *The Liberalisation of the European Civil*

Aviation Industry: Economic and Policy Implications, C.A. Piga and M.J. Gil-Moltó (Eds.), 2007, vol. 97(1), 105-122.

Books

• Spectrum Management: Sharing a Wireless Input, Saarbrücken, Lambert Academic Publishing, 2013 (ISBN 978-3-659-33432-0).

Edited Books

Regole, mercati e sentimenti morali [Rules, Markets, and Moral Sentiments], Macerata, Eum, 2021 (ISBN 978-88-6056-756-7 (print)).

Book chapters

In English:

- "Concentration of Income and Wealth in Italy and Remarks on Their Tax Treatment" (with Alfonso Carfora and Eleonora Cutrini), in *La sostenibilità: Percorsi tra ambiente, società e governance* [Sustainability: Pathways Across Environment, Society, and Governance], M. Biasini, E. Giacomini, and N. Marinelli (Eds.), Macerata, Eum, 2024, pp. 99-125.
- "5G Networks: This Time It Is Different" (with Marja Matinmikko-Blue), in *La forza delle reti* [The Strength of Networks], G. Busilacchi and E. Cedrola (Eds.), Roma, Aracne, 2020, pp. 131-151.
- "The Returns to Education in Italy in Recent Years" (with Silvia Leoni), in *Crescita economica, tutela dei diritti e ruolo delle istituzioni* [Economic Growth, Rights Protection and the Role of Institutions], T. Febbrajo and M. Ricci (Eds.), Macerata, Eum, 2018, pp. 145-170.
- "Incentives Facing Local Governments in the Absence of Credible Enforcement" (with Annalisa Vinella), in *Multi-level Finance and the Euro Crisis*, E. Ahmad, M. Bordignon and G. Brosio (Eds.), Edward Elgar publishing, 2016, pp. 326-358.
- "University Dropout in Italy" (with Lara Gitto and Luisa Monaco), in *Youth and the Crisis: Unemployment, Education and Health in Europe*, G. Coppola and N. O'Higgins (Eds.), Routledge, 2015, pp. 75-88.
- "Spectrum Trading", in *Spectrum Management: Using the Airwaves for Maximum Social and Economic Benefit*, M. Cave and W. Webb (Eds.), Cambridge University Press, 2015, pp. 113-127.
- "Cognitive Radio Policy Analysis: Framework and Implementation" (with Arturas Medeisis), in *Cognitive Radio Policy and Regulation: Techno-Economic Studies to Facilitate Dynamic Spectrum Access*, A. Medeisis and O. Holland (Eds.), Springer, 2014, pp. 251-255.
- "Helping Innovation of Cognitive Radio" (with Arturas Medeisis), in *Cognitive Radio Policy and Regulation: Techno-Economic Studies to Facilitate Dynamic Spectrum Access*, A. Medeisis and O. Holland (Eds.), Springer, 2014, pp. 292-298.
- "Impact assessment for Cognitive Radio" (with Peter Anker), in *Cognitive Radio Policy and Regulation: Techno-Economic Studies to Facilitate Dynamic Spectrum Access*, A. Medeisis and O. Holland (Eds.), Springer, 2014, pp. 298-304.
- "Monitoring EU Telecoms Policy: Spectrum Policy" (with Martin Cave), in *Monitoring EU Telecoms Policy*, M. Cave, J. Haucap, J. Padilla, A. Renda and B. Williamson (Eds.), Madrid, Mic-Nerec, 2009, pp. 19-26.

• "Spectrum Management and Regulation: Towards a Full-Fledged Market for Spectrum Bands?" (with Diego Piacentino), in *Servizi pubblici: nuove tendenze nella regolamentazione, nella produzione e nel finanziamento* [Public Services: New Trends in Regulation, Production and Financing], M. Marrelli, F. Padovano and I. Rizzo (Eds.), Milano, Angeli, 2007, pp. 131-156.

In Italian:

- "Il ruolo dei comuni nella transizione digitale" [The Role of Municipalities in Digital Transition] (with Annalisa Vinella), in *La risposta dei comuni alla crisi pandemica* [How Municipalities Reacted to the Pandemic Crisis], M. Degni (Ed.), Roma, Castelvecchi, 2021, pp. 498–528.
- "Alcune note sulle relazioni tra incentivi economici, norme giuridiche e regole morali" [Notes on Relations among Economic Incentives, Legal Rules, and Moral Norms], in *Regole, mercati e sentimenti morali*, L.F. Minervini (Ed.), Macerata, Eum, 2021, pp. 7-28.
- "La corruzione in sanità: i nuovi strumenti per individuarla e contrastarla" [Corruption in Healthcare: New Tools to Uncover It and Thwart It" (with Lara Gitto and Francesco Saverio Mennini), in *Regole, mercati e sentimenti morali*, L.F. Minervini (Ed.), Macerata, Eum, 2021, pp. 277-294.
- "Punitive damages. L'approccio di Law & Economics" [Punitive Damages: A Law & Economics Approach], in Il punto sui così detti "danni punitivi" [The State of the Art on Punitive Damages], U. Perfetti (Ed.), Napoli, ESI, 2019, pp. 207-222.
- "La gestione dei rifiuti come problema di rete" [Waste Management as a Complex Network Issue] (with Roy Cerqueti), in *Verso l'economia circolare* [Towards the Circular Economy], A. Paolini (Ed.), Macerata, Eum, 2018, pp. 65-77.
- "La spesa delle famiglie per la mensa scolastica: prezzo o contributo per il servizio?" [Families' Expenditure on School Meals: Prices or Monetary Contributions to Deliver the Services?], in *Pratiche alimentari e relazioni sociali* [Nutrition Practices and Social Relations], C. Francesconi and M. Raiteri (Eds.), Milano, Franco Angeli, 2018, pp. 126-139.
- "Sergio Steve e Duncan Black" [Sergio Steve and Duncan Black], in *Economia, politica e cultura nell'Italia del XX secolo. Attualità del pensiero critico di Sergio Steve* [Economics, Politics and Culture in 20th Century Italy. Relevance of Sergio Steve's Critical Thinking], S. Gorini, E. Longobardi and G. Vitaletti (Eds.), Milano, Franco Angeli, 2018, pp. 259-271.
- "Effetti economici delle imposte" [Economic Effects of Taxation] (with Annalisa Vinella), in *Manuale di scienza delle finanze, diritto finanziario e contabilità pubblica* [Handbook of public finance, financial law and public accounting], A. Uricchio, V. Peragine and M. Aulenta (Eds.), Bari, Nel Diritto, 2018, pp. 231-240.
- "I fallimenti di mercato" [Market Failures] (with Annalisa Vinella), in *Manuale di scienza delle finanze, diritto finanziario e contabilità pubblica* [Handbook of public finance, financial law and public accounting], A. Uricchio, V. Peragine and M. Aulenta (Eds.), Bari, Nel Diritto, 2018, pp. 77-98.
- "Compagnie di bandiera e proprietà pubblica: tra sopravvivenza e crisi" [Flag Carriers and Public Ownership: Crisis and Survival], in *Mercato e politiche pubbliche nell'industria del trasporto aereo* [Market and Public Policies in the Air Transport Industry], A. Macchiati and D. Piacentino (Eds.), Bologna, Il Mulino, 2006, pp. 175-207.
- Privatizzazioni e riorganizzazioni delle aziende di servizi pubblici locali [Privatization and Reorganization of Public Utility Companies], Rome, CNR (Consiglio Nazionale delle Ricerche), 2006. Available at http://www.issirfa.cnr.it/3512,1259.html.

Short notes, other papers and publications

- Assessing the Targeting Effectiveness of Fiscal Incentives towards Energy-Poor Families (with Alfonso Carfora), invited conference paper, December 2024 abstract available in "CFE-CMStatistics 2024 Book of abstracts", p. 177 (ISBN: 978-9925-7812-8-7).
- On Shared Use of Upper 6 GHz Band by IMT and RLANs (with Arturas Medeisis and Fernando Beltran), conference paper, October 2024 - available in IEEE Future Networks World Forum (FNWF), IEEE, pp. 69 - 74 (ISBN: 979-8-3503-7949-5).
- The Perfect Way to Manage Spectrum (with Arturas Medeisis and William Webb), conference paper, May 2023 available at https://dx.doi.org/10.48550/arXiv.2503.06318.
- Regulation by Independent Agencies: Who is the Principal, and What Does She Want With Examples, Mainly from Transport Regulation in Italy (with Diego Piacentino), conference paper, September 2019.
- Sergio Steve e Duncan Black, conference paper, "Giornata Steve", Rome, Accademia Nazionale dei Lincei and Sapienza University, 19 October 2016.
- Incentives for Incumbent Spectrum Users in Licensed Shared Access (LSA): A Dynamic Capabilities View (with Petri Ahokangas, Marja Matinmikko, Seppo Yrjölä, Vånia Gonçalves and Miia Mustonen), Oulu, VTT and University of Oulu, mimeo, 2015.
- Pluralistic Licensing and Its Application to Next Generation Networks (with Oliver Holland, Luca De Nardis, Keith Nolan, Arturas Medeisis, Peter Anker, Fernando Velez, Marja Matinmikko, John Sydor and Hamid Aghvami), mimeo, 2014.
- Se un incendio mette a nudo tutti i mali di Fiumicino [Fire Reveals Inefficiencies at Fiumicino Airport], www.lavoce.info, 6 October 2015.
- Concorrenza fra aeroporti e formule di tariffazione [On the Airport Business: Competition and Price Regulation] (with Diego Piacentino), seminar paper, Ancona, Università Politecnica delle Marche, January 2014.
- Autorità dei trasporti: qui comanda la politica [Transportation Authority: Politics Rule], www.lavoce.info, 6
 August 2013.
- Aeroporto Sanzio: quale futuro [Sanzio Airport: What future?] (with Andrea Mosconi), *Realtà industriale*, no. 10(October), 2011.
- Essays on Optimal Spectrum Management for Expanding Wireless Communications, Coventry (UK): University of Warwick, Warwick Business School, 2011. PhD thesis supervised by prof. Martin Cave, OBE. Dissertation committee: prof. Gérard Pogorel; prof. Gregory Crawford; prof. Qing Wang.
- Un agente senza un (vero) principale: la magistratura in Italia [An Agent without a (Real) Principal: the Italian Judiciary] (with Diego Piacentino), mimeo, University of Macerata, July 2010.
- Alitalia: la riorganizzazione non può attendere [Alitalia: Its Reorganization Can Not Be Delayed] (with Diego Piacentino), www.lavoce.info, 27 June 2008.
- "Economics of Spectrum: Implications for the Netherlands" (with Martin Cave), in *Mediaforum*, 2006, n. 2, pp. 30-34.
- "Uno spettro da ridisegnare" [Spectrum Allocation: Why It Has to Be Re-Designed] (with Martin Cave), *Il Sole 24 Ore*, 12 January 2006.
- New Spectrum-Using Technologies and the Future of Spectrum Management: A European Policy Perspective (with Martin Cave), paper for ThinkTel, 2006.

- Spectrum Management and Technological Change (with Martin Cave), paper for ThinkTel, 2005.
- Le privatizzazioni degli enti locali: quale ratio? [Local Governments' Privatizations: Which Rationale?] (with Diego Piacentino), seminar paper, Rome, Università "Sapienza", School of Economics, 2004.
- Economic Effects of Discretionary Powers on Accountability in the Bookkeeping of Regulated Enterprises, Rotterdam, Erasmus University-Rotterdam Institute of Law and Economics, 2003. Available at http://www.emle.org/index_org.html.

Working papers

- Technical Policy Options to Enable Shared Use of the Upper 6 GHz Band GHz (with Fernando Beltrán, Arturas Medeisis, and William Webb). Available at SSRN: https://ssrn.com/abstract=5349552, doi: 10.2139/ssrn.5349552.
- Exploring the Scope of a Market Mechanism in the Allocation of Shared Spectrum in 6 GHz (with Fernando Beltrán, Arturas Medeisis, and William Webb).
- A Regulatory Framework to Enable Shared Use of the Upper 6 GHz Band by IMT and RLAN Applications GHz (with Fernando Beltrán, Arturas Medeisis, and William Webb). Available at SSRN: https://ssrn.com/abstract=5366576, doi: 10.2139/ssrn.5366576.
- Al-based Interference Coordination for Local Spectrum Licensing in 6G (with Arturo Basaure, Marja Matinmikko-Blue, and Arthur Sena de Sousa).
- Energy Efficiency and Household Energy Poverty: The Impact of Rebound Effects in Italy.
- Choosing the Right Instrument: Fiscal and Spending Policies in a Model of Co-Produced Healthcare (with Fabio Fiorillo and Annalisa Vinella).
- The Efficient Regulation of the Airport Business: Evidence from Italy (with Vincenzo Patrizii).
- Open Issues in the Economic Analysis of Contract Enforcement (with Daniel Danau and Annalisa Vinella).
- Purchasing Club Goods under Majority Rule.

RESEARCH PROJECTS (SELECTED WORK)

National research projects

Research on "Innovation Ecosystem: Innovation, digitalisation and sustainability for the diffused economy in Central Italy", spoke no. 7 on "Smart solutions and educational programs for anti-fragility and inclusivity", work package no. 3 "Industrial value chains with high growth potential", *team member*, PNRR 2022 (Italian Ministry of Economics and Finance, The National Recovery and Resilience Plan) – *ongoing*.

Research on "Reconciling efficiency and equity in the Italian healthcare system after the pandemic crisis", team member, PRIN 2022 (Italian Ministry of Research/ Research Projects of National Interest) – ongoing.

Research on "Social welfare and healthcare", *team member*, PRIN 2020 (Italian Ministry of Research/ Research Projects of National Interest) – not financed.

Study on the proposed "Contratto di Programma 2012-2044" to regulate Aeroporti di Roma Spa, *team member*, AF-Mercados on behalf of Ibar and Assaereo, 2013.

Research on "Political economy ed efficienza della spesa pubblica: Evidenza sul ruolo delle istituzioni politiche nella governance dei servizi pubblici" ["Political economy and efficiency of public expenditure: Evidence on the role of political institutions in the governance of public services"], *team member*, PRIN 2012 (Italian Ministry of Research/ Research Projects of National Interest).

Research on "Pubblicità e *multihoming* nei mercati dei media a due versanti" ["Advertising and multihoming in two-sided media markets"], *team member*, PRIN 2010 (Italian Ministry of Research/ Research Projects of National Interest) – not financed.

Research on price regulation of public utility industries, *junior consultant*, Ministry of economics and finance-NARS, Italy, 2004-2005.

International research projects

Research project on "Enhancing Scientific Capacity for Energy Poverty (ENPOWER)"; team member; Horizon Europe research and innovation programme, GA n. 101160253 (University of Banja Luka, Bosnia and Herzegovina, with KU Leuven, B, Tilburg University, NL, University of Macerata, I, SiTeS – Sustainable Technology Systems, IRL) – *ongoing*.

Spectrum management training program, Module SMTP OM-4 on "Economic and market tools for spectrum management", International Telecommunication Union-Radiocommunication Bureau, ITU Academy, (with Martin Cave), 2014.

Research project on "Techno-economic regulatory framework for radio spectrum access for cognitive radio/software defined radio (TERRA)"; *member of the Management Committee* and *Chair of WG4* on "Impact assessment of CR/SDR regulation"; European Cooperation in Science and Technology (COST), ICT Action IC0905, www.cost-terra.org, May 2010 – April 2014.

Study on the future of spectrum usage rights and wireless licensing in an increasingly competitive environment, *team member*, International Telecommunication Union-Radiocommunication Bureau, 2007.

Research project on "Cost-benefit analysis of options for better functioning of the internal market in electronic communications", *team member*, European Commission-Information society and media Directorate-general, 2007.

Study on spectrum policy options, *team member*, Department of communications information technology and the arts (DCITA), Australia, 2006.

Research project on "Spectrum policies and radio technologies viable in emerging wireless societies (SPORTVIEWS)", team member, European Commission-Information society and media Directorategeneral, 2006.

ADDITIONAL INFORMATION ABOUT RESEARCH ACTIVITIES

- Editorial Board Member of American Journal of Environmental Protection, Science PG (since May 2023).
- Editorial Board Member of *Modern Economy and Management*, Innovation Forever PGL (since April 2023).
- Editorial Board Member of *SCIREA Journal of Education*, Science Research Association (since July 2019).

- Member of the Scientific Paper Review Committee of GLOBE 2024 (11th Global Conference on Business and Economics).
- Member of the ICT 2014 technical committee.
- Member of the IEEE/PIMRC 2013 technical committee.
- Reviewer for: Administrative Sciences: - Advances in Economics and Business: American Journal of Environmental Protection: - Argomenti: - Communications and Strategies: -European Journal of Law and Economics; - Forum for Social Economics; - Information Economics and Policy: - International Journal of Manpower: - Jahrbücher für Nationalökonomie und Statistik; - Journal of Industrial and Business Economics; International Journal of Technology, Policy and Management: - SN Business and Economics: -Studies in Higher Education; - Sustainability; - The Italian Journal of Public Economics: -Technological and Economic Development of Economy; - Telecommunications Policy; -Telecommunications Systems.

PRIZES AND AWARDS

Winner of national competition for funds for basic research, "Fondo di finanziamento per le attività base di ricerca (FFABR)", Anvur [National Agency for Evaluation of Universities and Research] (year 2017).

Runner-up award for the paper entitled "Public Goods Provision: Matching Behaviour with Financially Constrained Bidders. The Case of Spectrum Commons", Woxbridge Spring Doctoral Conference, University of Oxford, Said Business School (year 2009).

TEACHING

University of Macerata – Department of Economics and Law, and Department of Law (since academic year 2004/05): courses in *Public Economics* and *Public Finance*.

University of Macerata – Department of Law (since academic year 2014/15): course in *Fundamentals of Planning and Administration of Services: Economics of Welfare and Public Goods.*

University of Urbino "Carlo Bo" – Department of Economics, Society, and Politics (since academic year 2014/15): course in *Economic Analysis of Public Policies and Social Services*.

University of Macerata – Department of Economics and Law (academic years 2014/15 to 2016/17): course in *Topics of Applied Economics*.

University of Macerata – Department of Law (academic year 2016/17): course in *Fundamentals and Methods of Empirical Research in Social Sciences*.

University of Macerata – Department of Law (academic years 2011/12 to 2013/14): course in *Fundamentals* of *Planning and Administration of Services: Management of profit and Not-for-Profit Organisations*.

University of Macerata - Inter-university School for Specialization in Higher Education (academic years 2006/07 to 2007/08): course in *Teaching Public Economics and Finance*.

University of Macerata - School of Political Sciences (academic year 2005/06): course in *Accountancy for the Public Sector*.

University of Urbino "Carlo Bo" - School of Law (academic years 2004/05 to 2006/07): course in *Public Economics and Finance*.

University of Urbino "Carlo Bo" - School of Law (academic year 2004/05): lectures on evaluation of investment projects in the public sector, for the course in *Microeconomics*.

Luiss "Guido Carli", Rome - School of Economics (academic years 2003/04, 2004/05, 2010/11): teaching assistant in *Public Economics and Finance*.

FURTHER INFORMATION

Institutional tasks at the University of Macerata, by election or nomination:

- Member of the Working group on Open Science Policy (since 2023).
- Member of the Committee for Research Ethics Policy (since 2021).
- Researchers' representative in the Academic Senate (since 2021 re-election in 2024).
- Researchers' representative in the Academic Senate (2018).
- Scuola di Studi Superiori "Giacomo Leopardi" tutor (2014- 2024).
- Department of Economics and Law, member of the Research Committee (since November 2021).
- Department of Economics and Law, member of the joint committee lecturers-students (since 2020).
- Department of Economics and Law, student advisor for the course programme in "Economia, Territorio e Ambiente" [Economics, Land, and Environment] (code: L-33) (since November 2021).
- Department Chair's representative for Open Science Policy (since 2022).
- Department Chair's representative for Campus libraries (since 2018).
- Department Chair's representative for projects involving not-for-profit organisations and local fiscal policies (2012 - 2018).

Additional institutional roles in various Italian universities:

- Panel member in evaluating candidates for research positions (tenure track and junior ones).
- Panel member in PhD awarding committees.

LANGUAGE SKILLS

- Italian mother tongue; English fluent;
- German basic knowledge.

Signed: Leo Fulvio Minervini