

Curriculum Vitae of Davide Gurrera

PERSONAL INFORMATION

Nationality: Italian

Address: Palermo (Italy)

E-mail: davide.gurrera@gmail.com

LANGUAGES

- Italian (mother tongue)
- English (fluent)
- Russian (fair)

EDUCATION

- Candidate of Sciences in Physics and Mathematics
Lobachevsky State University of Nizhni Novgorod (Russian Federation)
- PhD in Applied Physics
University of Palermo (Italy)
- Master's degree in Physics (Astrophysics)
University of Palermo (Italy)

WORK EXPERIENCE

- Postdoc position
“Bank credit, monetary policy and business cycles with heterogeneous locally interacting agents”
Institute of Economics and Entrepreneurship, Centre of Macro and Microeconomics – Lobachevsky State University of Nizhni Novgorod (Russian Federation)
Analysis of the effects of endogenous idiosyncratic shocks impinging on a credit market at different phases. Particularly, by means of simulations we studied the evolution of a spatial network, involving entities with heterogeneous characteristics, where we allow for risk diversification and multiple bank–firm relations. Findings reveal that the adoption of static risk-adverse countermeasures may result in a self-correcting environment characterized however by long-lasting thriving periods followed by sudden deep recessions.
- Postdoc position
“Agent-based models for an analytical macroeconomic framework” (financed by the Institute for New Economic Thinking)
Faculty of Economics – Università Politecnica delle Marche (Italy)
Development of computational models where heterogeneous agents interact both in the financial and the real spheres and application of analytical methods to represent the macroeconomic system.
- Statistics teacher
Faculty of Economics – Università Politecnica delle Marche (Italy)

- Postdoc position

“New Tools in Credit Network Modeling with Heterogenous Agents” (financed by the Institute for New Economic Thinking)

University of Palermo (Italy)

Our goal has been to capture the systemic risk of the credit market by combining information about the level of fragility of individual economic entities with the network structure of their mutual credit exposures. Specifically, methods to highlight the detection of preferential (or avoided) relationships among heterogeneous participants (primarily banks and firms) in the credit market as a whole have been employed. Empirical investigations have been performed and an agent-based model where the heterogeneity of the agents is explicitly taken into account has been developed and implemented in JAVA. Simulations of the model have evaluated how heterogeneity and network properties affect the robustness and resilience properties of the credit market.

- Mathematics and Physics teacher

I.C. di II grado di Ustica, Ustica (Italy)

- Mathematics and Physics teacher

Istituto Paritario Trinacria, Palermo (Italy)

- Physics teacher

Classical Mechanics and Thermodynamics

University of Palermo (Italy)

- Postdoc position

“Analysis and modeling of wind time series”

University of Palermo (Italy)

- Hidden Markov Processes for Wind Direction Forecasting;

- Development of a general class of stochastic models for hourly average wind speed prediction taking into account all the main features of wind speed data. The proposed approach has attained valuable results in terms both of modelling and forecasting; particularly, the 24 hours predictions obtained employing only one-month time series are quite similar to those provided by a feed-forward artificial neural network trained on two years data.

- Physics teacher

Classical Mechanics

University of Palermo (Italy)

- Mathematics and Statistics teacher

Poseidon Centro Studi Universitari s.r.l., Palermo (Italy)

COMPUTER SKILLS

- Linux/Windows OS
- R environment for statistical computing and graphics
- Java
- Fortran
- Mathematica
- Matlab

- Cytoscape
- Java Neural Network Simulator
- LaTeX, Office suite, etc.

PUBLICATIONS

REGULAR PAPERS

1. Saverio Bivona, Giovanni Bonanno, Riccardo Burlon, Davide Gurrera, Claudio Leone, Signature of quantum interferences in above threshold detachment of negative ions by a short infrared pulse, *Physical Review A*, 77, 051404(R), (2008)
2. Saverio Bivona, Giovanni Bonanno, Riccardo Burlon, Davide Gurrera, Claudio Leone, Taxonomy of correlation of wind velocity: an application to the Sicilian area, *Physica A*, 387, 5910-5915, (2008)
3. Saverio Bivona, Giovanni Bonanno, Riccardo Burlon, Davide Gurrera, Claudio Leone, Univariate and Multivariate properties of wind velocity time series, *Journal of Statistical Mechanics: Theory and Experiments*, P02026+1-P02026+12, (2009)
4. Giovanni Bonanno, Riccardo Burlon, Davide Gurrera, Wind Speed Forecasting, *Modern Problems of Statistical Physics*, 8, 146-160, (2009)
5. Saverio Bivona, Giovanni Bonanno, Riccardo Burlon, Davide Gurrera, Claudio Leone, Stochastic models for wind speed time series: a case study, *Acta Physica Polonica B*, 41, 1083-1092 (2010)
6. Saverio Bivona, Giovanni Bonanno, Riccardo Burlon, Davide Gurrera, Claudio Leone, Stochastic models for wind speed forecasting, *Energy Conversion and Management*, 52, 1157-1165, (2011)

CONFERENCE PROCEEDINGS

1. Saverio Bivona, Giovanni Bonanno, Riccardo Burlon, Davide Gurrera, Claudio Leone, Seasonal ARIMA Models for Wind Speed Time Series, *Renewable Energy*, Proc. of the "10th World Renewable Energy Conference - WREC X", Ed. by A.A.M. Sayigh, Elsevier, Edingurgh, UK, (2008)
2. Cimino A, Fauci F, Grammatura R, Gurrera D, Oieni A (2009). Image Processing in Pollution Vulnerability Assessment of Sicily Aquifers. *EPITOME*, vol. 3, p. 26-27, ISSN: 1972-1552
3. Giovanni Bonanno, Riccardo Burlon, Davide Gurrera and Claudio Leone, Wind speed stochastic models, a case study for the mediterranean area, *Proceedings of the 2nd EMUNI Research Souk, ReSouk2010, Palermo – Italy – 14 Giugno 2010*.
4. Salvatore Basile, Riccardo Burlon, Davide Gurrera, Analysis and modeling of wind directions time series, *International Conference on Renewable Energy Research and Applications*, 20 - 23 October 2013, Madrid, Spain.

FORTHCOMING WORKS

1. Salvatore Basile, Riccardo Burlon, Davide Gurrera, Models for wind direction time series.
2. D. Gurrera, L. Riccetti and A. Russo, Bank credit, monetary policy and business cycles with heterogeneous locally interacting agents.

ADDITIONAL INFORMATION

Reviewer of Applied Energy (IF 4.8) and Energy Conversion and Managment (IF 2.8).