MARINA DIAKONOVA

DATA SCIENTIST

Banco de España . Calle Alcalá, 48 . Madrid, 28014
marina.diakonova@bde.es . LinkedIn: mdiakonova . Google Scholar: Marina Diakonova

Professional Experience

Data Scientist and Postdoctoral Research Associate, University of Oxford, Oxford, UK — 2016-2020
Working on the "METER" study to quantify the capacity of household-level demand side response. Data analysis, management, visualisation, documentation, and deposition

Data Scientist, Thames Valley Environmental Records Centre, Oxfordshire County Council, UK — June 2019
Using QGIS to develop optimal intervention strategies to alleviate the reduction of pollinator population

Postdoctoral Research Associate, Queen Mary University, London, UK — 2015-2016
Quantitative analysis into methods to incorporate time to network models of societal processes

Postdoctoral Research Associate, IFISC, Palma de Mallorca, Spain — 2012-2015
FP7 LASAGNE project on adding dynamic multidimensional ties to network models of opinion dynamics

Assurance Associate, PwC, London, UK — 2005-2007
Audit of private and public companies, part-time ICAS qualification stream in BPP Professional Education

Education

University of Warwick, UK - PhD in Complexity Science, 2013
Positing an information-theoretic measure to quantify the emergence of patterns in complex systems, testing it on time-series from low-dimensional chaotic maps

University of Warwick, UK - MSc in Complexity Science, 2008, *with distinction*
Imperial College, London, UK - MSc in Quantum Physics and Fundamental Forces, 2005
Imperial College, London, UK - BSc in Physics and Theoretical Physics, 2004
Computational demonstration of fuzzy logic in economic decision-making

Languages

- Python, D3, SQL, PHP, HTML, Javascript, Processing, Matlab, C++, Git, Sphinx, QGIS
- English, Russian (bilingual), Spanish (advanced), French (basic)

Other skills

Teaching assistant (4 years), PhD student supervision, paper refereeing, presentations at >30 international conferences

Publications

Demand Side Management

Cluster analysis and prediction of residential peak demand profiles using occupant activity data
A Satre-Meloy, M Diakonova, P Grunewald, *Applied Energy*, 260, 114246 (2020)

Energy and enjoyment: The value of household electricity consumption
P Grunewald, M Diakonova, *Energy and Behaviour*, 263-281 (2020)

The specific contributions of activities to household electricity demand
P Grunewald, M Diakonova, *Energy and Buildings*, 204, 109498 (2019)

METER: UK Household Electricity and Activity Survey, 2016-2019: Secure Access
P Grunewald, M Diakonova (2019)
https://beta.ukdataservice.ac.uk/datacatalogue/doi/?id=8475

Better off with less (energy)? Household activities during interventions
M Diakonova, P Grunewald, *ECEEE Summer Study 2019*

Daily life and demand: an analysis of intra-day variations in residential electricity consumption with time-use data
A Satre-Meloy, M Diakonova, P Grunewald, *Energy Efficiency*, 1-26 (2019)

What makes you peak? Cluster analysis of household activities and electricity demand
A Satre-Meloy, M Diakonova, P Grunewald, *ECEEE Summer Study 2019*

The electricity footprint of household activities-implications for demand models
P Grunewald, M Diakonova, *Energy and Buildings*, 174, 635-641 (2018)

Flexibility, dynamism and diversity in energy supply and demand: A critical review
P Grunewald, M Diakonova, *Energy Research & Social Science*, 38, 58-66 (2018)

Daily life and demand: New data on behavioral drivers of residential electricity use patterns
A Satre-Meloy, M Diakonova, P Grunewald, *ACEEE Summer Study 2018*

What we do matters – a time-use app to capture energy relevant activities
P Grunewald, M Diakonova, D Zilli, J Bernard, J. and A Matousek
Eceee 2017 Summer Study Proceedings, 2085-2093

Minority Policy Topics

Using Twitter data to identify networks of interest in minority policy topics
M Morgan, G Killip, M Diakonova
SRI paper No 118, University of Leeds, UK (2019)

Dynamics on Networks

Information gerrymandering and undemocratic decisions
AJ Stewart, M Mosleh, M Diakonova, AA Arechar, DG Rand, JB Plotkin
Nature, 573 (7772), 117–121 (2019)

Dynamical leaps due to microscopic changes in multiplex networks
M Diakonova, JJ Ramasco, VM Eguíluz, *Europhysics Letters*,117 (4) (2017)

Dynamical origins of the community structure of an online multi-layer society
P Klimek, M Diakonova, VM Eguíluz, M San Miguel, S Thurner
New Journal of Physics, 18 (8), 083045 (2016)

Irreducibility of multilayer network dynamics: the case of the voter model
M Diakonova, V Nicosia, V Latora, M San Miguel, *New J. Phys*, 18, 023010 (2016)

Noise in coevolving networks
M Diakonova, VM Eguíluz, M San Miguel, *Physical Review E*, 92 (3), 032803 (2015)

Anomalous Shattered Fragmentation Transition in the Coevolving Multiplex
M San Miguel, M Diakonova, VM3 Eguíluz
2014 Tenth International Conference on Signal-Image Technology and Internet-Based Systems

Absorbing and shattered fragmentation transitions in multilayer coevolution
M Diakonova, M San Miguel, VM Eguíluz, *Physical Review E*, 89 (6), 062818 (2014)

Complexity and Emergence

Mathematical examples of space-time phases
M Diakonova, RS MacKay
International Journal of Bifurcation and Chaos, 21 (08), 2297-2304 (2011)

Quantifying emergence in terms of persistent mutual information
RC Ball, M Diakonova, RS Mackay
Advances in Complex Systems, 13 (03), 327-338 (2010)