Curriculum Vitae

Personal Information

Name   Aleix Bassolas Esteban

Date of Birth   *October 27th, 1990*

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Google Scholar   https://scholar.google.es/citations?user=tXaOGyUAAAAJ&hl=es

Education

Oct 2014 – Nov 2019	Ph.D. in Physics (Qualification: Excellent Cum Laude) – **IFISC (University of the Balearic Islands)** Supervisors: José Javier Ramasco and Maxime Lenormand
Sep 2013 – Jul 2014	MSc in Advanced Physics – **University of Barcelona** Supervisor: Albert Díaz-Guilera
Sep 2008 – Jul 2013	Degree in Physics – **University of Barcelona**

Work Experience

April 2021 – Present	Postdoctoral Fellow at the Universitat Rovira i Virgili
Feb 2020 – Mar 2021	Postdoctoral Research Assistant at Queen Mary University of London
Nov 2019 – Jan 2020	Postdoctoral Researcher at IFISC (UIB-CSIC)
Oct 2014 – Oct 2019	Ph.D. Student - IFISC (UIB-CSIC)

o Research Topics
- Human Mobility
- Urban function and structure
- Transportation infrastructures
- Complex Networks
- Agent-based modelling

o Participation in the European projects INSIGHT (https://www.insight-fp7.eu/) and LASAGNE (http://complex.ffn.ub.es/ lasagne/)

o Participation in the Spanish national projects ESOTECOS and PACSS

o Collaboration with private companies: Google, Nommon and Kido Dynamics

Feb 2014 – Jul 2014	Junior Researcher Internship – Telefonica I+D

Publications

A. Bassolas, S. Gómez and A. Arenas. "A link model approach to identify congestion hotspots." *arXiv preprint* arXiv:2205.08981 (2022).

A. Bassolas, A. Eriksson, A. Marot, M. Rosvall, and V. Nicosia. "Metadata-informed community detection with lazy encoding using absorbing random walks." *arXiv preprint* arXiv:2111.05158 (2021).

M.J. Haughey, **A. Bassolas**, S. Sousa, A.M. Baker, T.A. Graham, V. Nicosia, and W. Huang. "First passage time analysis of spatial mutation patterns reveals evolutionary dynamics of pre-existing resistance in colorectal cancer." *bioRxiv* (2022) https://doi.org/10.1101/2022.02.22.481463.

A. Bassolas, S. Gómez and A. Arenas. "Diffusion and Synchronization Dynamics Reveal the Multi-Scale Patterns of Spatial Segregation." *Frontiers in Physics* 346, (2022).

A. Bassolas, A. Santoro, S. Sousa, S. Rognone, and V. Nicosia. "Optimizing the mitigation of epidemic spreading through targeted adoption of contact tracing apps." *Physical Review Research* 4.2, 023092 (2022).

J. Aguilar, **A. Bassolas**, G. Ghoshal, S. Hazarie, A. Kirkley, M. Mazzoli, S. Meloni, S. Mimar, V. Nicosia, J. J. Ramasco and A. Sadilek "Impact of urban structure on infectious disease spreading." *Scientific Reports* 12(1), 3816, (2022).

H. Barbosa, S. Hazarie, B. Dickinson, **A. Bassolas**, A. Frank, H. Kautz, A. Sadilek, J.J. Ramasco, G. Ghoshal "Uncovering the socioeconomic facets of human mobility." *Scientific reports* 11(1), 1-13 (2021).

A. Bassolas, S. Sousa, and V. Nicosia. "Diffusion segregation and the disproportionate incidence of COVID-19 in African American communities." *Journal of the Royal Society Interface* 18(174):20200961 (2021).

A. Bassolas and V. Nicosia. First-passage times to quantify and compare structural correlations and heterogeneity in complex systems. *Communications Physics* 4(1), 1-4 (2021)

A. Bassolas, R. Gallotti, F. Lamanna, M. Lenormand and J.J. Ramasco. Scaling in the recovery of urban transportation systems from massive events. *Scientific Reports* 10(1), 1-13 (2020).

Aleix Bassolas et al. "Hierarchical organization of urban mobility and its connection with city livability. " *Nature Communications* 10, 4817 (2019).

Mattia Mazzoli, Alex Molas, **Aleix Bassolas**, Maxime Lenormand, Pere Colet and José J. Ramasco "Field theory for recurrent mobility." *Nature Communications* 10, 3895 (2019).

Aleix Bassolas, J.J. Ramasco, R. Herranz, and O. G. Cantú-Ros. "Mobile phone records to feed activity-based travel demand models: MATSim for studying a cordon toll policy in Barcelona." *Transportation Research Part A: Policy and Practice* 121, 56-74 (2019).

Aleix Bassolas et al. "Touristic site attractiveness seen through Twitter." *EPJ Data Science* 5.1, 12 (2016).

Maxime Lenormand, **Aleix Bassolas**, and José J. Ramasco. "Systematic comparison of trip distribution laws and models." *Journal of Transport Geography* 51, 158-169, (2016).

Participation in Conferences

Talks

Aleix Bassolas and V. Nicosia. First-passage times to quantify and compare structural correlations and heterogeneity in complex systems. Presented at CCS 2021 – Lyon

Aleix Bassolas, S. Sousa and V. Nicosia. Dynamic segregation and the disproportionate incidence of COVID-19 in African American communities. Presented at CCS 2020

Aleix Bassolas and V. Nicosia. Quantifying spatial heterogeneity through random walks on graphs with coloured nodes. Presented at NetSci 2020

Aleix Bassolas, R. Gallotti, M. Lenormand, F. Lamana, J.J. Ramasco. Scaling in the recovery of cities from special events. Presented at Comsotec 2017 – Madrid

Aleix Bassolas, R. Gallotti, M. Lenormand, F. Lamana, J.J. Ramasco *Scaling in the recovery of cities from special events* CCS 2017 – Cancún

Aleix Bassolas, M. Lenormand, F. Lamana, J.J. Ramasco *Collapse of public transport networks under stress* CCS 2016 – Amsterdam

Aleix Bassolas, M. Lenormand, M. San Miguel, J. J. Ramasco *Jamming transition in transport networks*. Presented at Urbannet Satellite /NetSci 2015 – Zaragoza

Aleix Bassolas, M. Lenormand, M. San Miguel, J. J. Ramasco *Breaking strong disorder in multilayer networks*. Presented at Physmultinet2 Satellite / NetSci 2015 – Zaragoza

Aleix Bassolas, M. Lenormand, M. San Miguel, J.J. Ramasco *Jamming transition in transport networks*. Presented at Comsotec 2015 – Santander

Posters

Aleix Bassolas, R. Gallotti, M. Lenormand, F. Lamana, J.J. Ramasco Scaling in the recovery of cities from special events Crossroads in Complex systems 2017 Palma

Popular science articles

A. Bassolas, M. Mazzoli, and J.J. Ramasco. "Una nueva ciencia de la movilidad urbana." Investigación y Ciencia 528, 12-12 (2020). https://www.investigacionyciencia.es/revistas/investigacion-y-ciencia/las-vas-imprevistas-del-aprendizaje-806/una-nueva-ciencia-de-la-movilidad-urbana-18936

J.J. Ramasco **A. Bassolas**, M. Mazzoli, and P. Colet "¿Cómo gravita usted al trabajo?" The Conversation (2019) https://theconversation.com/como-gravita-usted-al-trabajo-123427.

Dissemination activities

Pint of Science 2017. Big Data: ¿Ciencia o Ficción? At Palma 80's Café 17/05/2017 (https://ifisc.uib-csic.es/en/news/pint-science-2017/)

"La ciència de les ciutats a través de la mobilitat i les dades" at Teresià de Tortosa (http://tarragona.nitdelarecerca.cat/ca/programacio/secundaria/)

Organization of R&D activities

Co-organizer of the workshop Young Researchers at the Crossroadswhich took place atIFISC, Mallorca (Spain), 2-4 June 2017

Co-organizer of the Satellite "Complex-Space: Analysis and Modelling of Spatial Complex Systems" in the CCS2020 Conference

Co-organizer of the Satellite "UrbanNet 2020" in the NetSci 2020 Conference.

Co-organizer of the Satellite "UrbanSys 2021" in the CCS 2021 Conference.

Other achievements

Reviewer for EPJ Data Science, Physical Review E and PLOS One

Invited speaker at the Spatial Networks symposium in the BMC-BAMC Glasgow 2021.

Board member of the Young Researchers of the Complex Systems Society (yrCSS)

Obtained grants and scholarships

FPI Pre-doctoral awarded by the Government of the Balearic Islands in 01/12/2016. Duration: 4 years. Carried out at the IFISC(Institute for Cross-Disciplinary Physics and Complex Systems)

Juan de la Cierva Formación Fellowship awarded by the Spanish Government

Margarita Salas Fellowship awarded by the University of the Balearic Islands

Skills & Background Knowledge

Technical skills

Python, *Advanced*

C, *Advanced*

R, *Intermediate*

C++, *Intermediate*

Fortran, *Intermediate*

Languages

English, *B2+*

Spanish, *Native*

Catalan, *Native*

Portuguese, *Intermediate*
French, *Basic*