

Lorenzo Mari – Curriculum vitæ

Personal information

Name / Surname Lorenzo Mari

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Nationality Italian

Date of birth May 22, 1981

Current position *Assistant Professor, Ecology*
DEIB, PoliMi

Research statement

Research interests As an environmental engineer with a PhD in information technology, I am deeply interested in the analysis of ecological and environmental processes by means of quantitative tools. My research activity is mainly devoted to the study of spatiotemporal dynamics in ecology and epidemiology by means of simple (whenever possible) yet rigorous mechanistic models. Over the last years I have become more and more involved in the emerging field of ecohydrology, an interdisciplinary discipline aimed at studying the interactions between water and ecosystems.

Research activities Examples of problems I have recently analyzed – or I am still struggling with – are: the persistence of metapopulations in river networks; the dynamics of waterborne disease epidemics (cholera and schistosomiasis in particular) and the role of human mobility in promoting their spatial diffusion; the population dynamics of freshwater invasive species and their spread over hydrological networks; the interaction between hydrodynamics and the ecology of species with pelagic developmental stages by means of computationally intensive simulations; the biodiversity patterns of complex, spatially explicit environments; the influence of seed foragers' movement strategies on the formation of vegetation patterns.

In addition to scientific relevance, some of these topics have clear social and/or economic implications. This is the case, for instance, of building models for cholera epidemics (like the one that stroke Haiti in 2010 and has been responsible for more than 750,000 cases and 9,000 casualties to date) or parasitic infections (like schistosomiasis, which affects more than 250 million people worldwide, especially in developing countries), as well as for the spread of alien invasive species (like the zebra mussel, which has been spreading in North American freshwaters for the past 25 years causing huge ecological and economic impacts). Mathematical models of disease ecology and biological invasions are key tools to understand drivers and controls of their spread, and to design effective control measures.

Current research and perspectives I am currently working on coupled physical-biological models to study the dispersal patterns of pelagic species in the Mediterranean Sea and the Pacific Ocean. Aim of the research is to understand the large-scale implications of connectivity for population ecology, conservation and management. I also continue working on waterborne disease dynamics. In particular, I am interested in the definition of formal conditions for pathogen epidemicity and endemicity, explicitly accounting for realistic environmental settings and for the interplay between epidemiological and ecological dynamics. The modeling tools developed for these two research lines (namely, computationally intensive individual-based simulations and stability analysis of large-scale spatially explicit systems) can be applied to a variety of problems that are crucial to conservation ecology like, for instance, the definition of persistence criteria for populations living in fragmented landscapes, dendritic networks or webs of marine protected areas, or the derivation of invasibility/persistence conditions for alien species or agricultural pests.

Employment

Jul 2017 –	Assistant Professor, DEIB, PoliMi
Oct 2014 – Jun 2017	Postdoctoral Research Associate, DEIB, PoliMi
Apr 2012 – Sept 2014	Postdoctoral Research Associate, Laboratoire d'Écohydrologie (ECHO), Ecole Polytechnique Fédérale de Lausanne (EPFL)
Jan 2012 – Jan 2014	Postdoctoral Research Associate, DEIB, PoliMi
Jul 2009 – Dec 2011	Postdoctoral Research Associate, ECHO, EPFL
Jan 2009 – Jul 2009	Temporary Research Associate, DEIB, PoliMi

Education

Cursus studiorum

Jan 2006 – Dec 2008	PhD, Information Technology, DEIB, PoliMi. Advisor: Prof. R. Casagrandi (DEIB, PoliMi). Tutor: Prof. C. Piccardi (DEIB, PoliMi). Degree awarded <i>with merit</i> on April 3 2009. Major research: “Models for movement ecology”. Advisor: Prof. R. Casagrandi; co-advisor: Prof. M. Gatto (DEIB, PoliMi). Part of the research work has been published in <i>Freshwater Biology</i> [a1], <i>The American Naturalist</i> [a3], <i>Ecohydrology</i> [a5] and <i>Theoretical Population Biology</i> [a6]. Minor research: “The impact of hydrodynamics on the spatial distribution of an aquatic species: a numerical study”. Advisor: Prof. L. Bonaventura (MOX Laboratorio di Modellistica e Calcolo Scientifico, Dipartimento di Matematica “F. Brioschi”, PoliMi). The results of the minor research have been published in <i>Ecological Modelling</i> [a4].
Oct 2003 – Oct 2005	MSc, Environmental and Land Engineering, I Facoltà di Ingegneria, PoliMi Thesis title: “Modelli spazialmente espliciti per la dinamica di popolazioni animali: la determinazione genetica del rapporto sessi” (<i>Spatially explicit models for the dynamics of animal populations: the genetic determination of the sex ratio</i>). Advisor: Prof. M. Gatto; co-advisor: Prof. R. Casagrandi. Mark: 110/110 <i>cum laude</i> . The thesis has been awarded the CIRITA 2006 prize. Part of the work has been published on <i>Mathematical Biosciences and Engineering</i> [a2].
Sept 2000 – Oct 2003	BSc, Environmental and Land Engineering, I Facoltà di Ingegneria, PoliMi Thesis title: “Ruolo di sostanze tossiche in un modello di competizione algale” (<i>Role of toxicants in a model of algal competition</i>). Advisor: Prof. A. Gragnani (DEIB, PoliMi). Mark: 103/110.

Visiting positions

Sept – Dec 2007	Visiting research collaborator at Prof. S.A. Levin's Theoretical Ecology Lab, Department of Ecology and Evolutionary Biology, Princeton University (NJ)
Mar 2006	Visiting at Prof. R. Nathan's Movement Ecology Lab, Department of Evolution, Systematics and Ecology, Hebrew University of Jerusalem (Israel)

Awards

July 2016	Polisocial Award, PoliMi
April 2015	D4D Health Prize, Data for Development Challenge, Orange
Sept 2014	Young Researchers' Award, Società Italiana di Ecologia (SIteE)
Nov 2012	Fondo Rotary Research Prize, Rotary Club Como
Sept 2008	Marchetti Prize for young researchers in Ecology, SIteE, as coauthor of the paper “Will the zebra mussel (<i>Dreissena polymorpha</i>) reach Florence along the Arno River? Results from a mechanistic network model”, XVIII Congresso della SIteE
Nov 2006	CIRITA (Centro Interdipartimentale di Ricerca in Informatica per il Territorio e l'Ambiente, PoliMi) Prize for the MSc Thesis “Modelli spazialmente espliciti per la dinamica di popolazioni animali: la determinazione genetica del rapporto sessi”
Apr 2017 – Apr 2023	<i>National Scientific Qualification for Associate Professorship in Ecology in Italian Universities</i>

Publications

Journal articles

- [a43] **L. Mari**, R. Casagrandi, A. Rinaldo, M. Gatto (2017)
A generalized definition of reactivity for ecological systems and the problem of transient species dynamics
Methods in Ecology and Evolution, in press. doi: 10.1111/2041-210X.12805
- [a42] L. Carraro, **L. Mari**, M. Gatto, A. Rinaldo, E. Bertuzzo (2017)
Spread of proliferative kidney disease in fish along stream networks: a spatial metacommunity framework
Freshwater Biology, in press. doi: 10.1111/fwb.12939
- [a41] M. Ciddio, **L. Mari**, S.H. Sokolow, G. De Leo, R. Casagrandi, M. Gatto (2017)
The spatial spread of schistosomiasis: a multidimensional network model applied to Saint-Louis region, Senegal
Advances in Water Resources, in press. doi: 10.1016/j.advwatres.2016.10.012
- [a40] **L. Mari**, M. Ciddio, R. Casagrandi, J. Perez-Saez, E. Bertuzzo, A. Rinaldo, S.H. Sokolow, G.A. De Leo, M. Gatto (2017)
Heterogeneity in schistosomiasis transmission dynamics
Journal of Theoretical Biology, 432:87–99. doi: 10.1016/j.jtbi.2017.08.015
- [a39] **L. Mari**, L. Bonaventura, A. Storto, P. Melià, M. Gatto, S. Masina, R. Casagrandi (2017)
Understanding large-scale, long-term larval connectivity patterns: the case of the Northern Line Islands in the Central Pacific Ocean
PLoS ONE, 12:e0182681. doi: 10.1371/journal.pone.0182681
- [a38] A. Rinaldo, E. Bertuzzo, M. Blokesch, **L. Mari**, M. Gatto (2017)
Modeling key drivers of cholera transmission dynamics provides new perspectives on parasitology
Trends in Parasitology, 33:587–599. doi: 10.1016/j.pt.2017.04.002
- [a37] **L. Mari**, M. Gatto, M. Ciddio, E.D. Dia, S.H. Sokolow, G. De Leo, R. Casagrandi (2017)
Big-data-driven modeling unveils country-wide drivers of endemic schistosomiasis
Scientific Reports, 7:489. doi: 10.1038/s41598-017-00493-1
- [a36] E. Bertuzzo, F. Finger, **L. Mari**, M. Gatto, A. Rinaldo (2016)
On the probability of extinction of the Haiti cholera epidemic
Stochastic Environmental Research and Risk Assessment, 30:2043–2055. doi: 10.1007/s00477-014-0906-3
- [a35] L. Carraro, **L. Mari**, H. Hartikainen, N. Strepparava, T. Wahli, J. Jokkela, M. Gatto, A. Rinaldo, E. Bertuzzo (2016)
An epidemiological model for proliferative kidney disease in salmonid populations
Parasites and Vectors, 9:487. doi: 10.1186/s13071-016-1759-z
- [a34] F. Finger, T. Genolet, **L. Mari**, G. Constantin De Magny, N.M. Manga, A. Rinaldo, E. Bertuzzo (2016)
Mobile phone data highlights the role of mass gatherings in the spreading of cholera outbreaks
Proceedings of the National Academy of Sciences of the USA, 113:6421–6426. doi: 10.1073/pnas.1522305113
- [a33] J. Perez-Saez, T. Mande, N. Ceperley, E. Bertuzzo, **L. Mari**, M. Gatto, A. Rinaldo (2016)
Hydrology and density feedbacks control the ecology of the intermediate hosts of schistosomiasis across habitats in seasonal climates
Proceedings of the National Academy of Sciences of the USA, 113:6427–6432. doi: 10.1073/pnas.1602251113
- [a32] E. Bertuzzo, F. Carrara, **L. Mari**, F. Altermatt, I. Rodriguez-Iturbe, A. Rinaldo (2016)
Geomorphic controls on elevational gradients of species richness
Proceedings of the National Academy of Sciences of the USA, 113:1737–1742. doi: 10.1073/pnas.1518922113

- [a31] J. Perez-Saez, **L. Mari**, E. Bertuzzo, R. Casagrandi, S.H. Sokolow, G. De Leo, T. Mande, N. Ceperley, J.M. Frohlich, M. Sou, H. Karambiri, H. Yacouba, A. Maiga, M. Gatto, A. Rinaldo (2015)
A theoretical analysis of the geography of schistosomiasis in Burkina Faso highlights the roles of human mobility and water resources development in disease transmission
PLoS Neglected Tropical Diseases, 9:e0004127. doi: 10.1371/journal.pntd.0004127
- [a30] L. Righetto, R.U. Zaman, Z.H. Mahmud, E. Bertuzzo, **L. Mari**, R. Casagrandi, M. Gatto, S. Islam, A. Rinaldo (2015)
Detection of *Vibrio cholerae* O1 and O139 in environmental waters of rural Bangladesh: a flow cytometry-based field trial
Epidemiology and Infection, 143:2330–2342. doi: 10.1017/S0950268814003252
- [a29] **L. Mari**, E. Bertuzzo, F. Finger, R. Casagrandi, M. Gatto, A. Rinaldo (2015)
On the predictive ability of mechanistic models for the Haitian cholera epidemic
Journal of the Royal Society Interface, 20140840. doi: 10.1098/rsif.2014.0840
- [a28] M. Ciddio, **L. Mari**, M. Gatto, A. Rinaldo, R. Casagrandi (2015)
The temporal patterns of disease severity and prevalence in schistosomiasis
Chaos, 25:036405. doi: 10.1063/1.4908202
- [a27] **L. Mari**, R. Casagrandi, E. Bertuzzo, A. Rinaldo, M. Gatto (2014)
Floquet theory for seasonal environmental forcing of spatially-explicit waterborne epidemics
Theoretical Ecology, 7:351–365. doi: 10.1007/s12080-014-0223-y
- [a26] F. Finger, A. Knox, E. Bertuzzo, **L. Mari**, D. Bompangue, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo (2014)
Cholera in the Lake Kivu region (DRC): integrating remote sensing and spatially-explicit epidemiological modeling
Water Resources Research, 50:5624–5637. doi: 10.1002/2014WR015521
- [a25] S. Ceola, E. Bertuzzo, **L. Mari**, G. Botter, I. Hödl, T.J. Battin, M. Gatto, A. Rinaldo (2014)
Light and hydrologic variability as drivers of stream biofilm dynamics in a flume experiment: a modelling approach
Ecohydrology, 7:391–400. doi: 10.1002/eco.1357
- [a24] **L. Mari**, R. Casagrandi, E. Bertuzzo, A. Rinaldo, M. Gatto (2014)
Metapopulation persistence and species spread in river networks
Ecology Letters, 17:426–434. doi: 10.1111/ele.12242
- [a23] I. Hödl, **L. Mari**, E. Bertuzzo, S. Suweis, K. Besemer, A. Rinaldo, T.J. Battin (2014)
Biophysical controls on cluster dynamics and architectural differentiation of microbial biofilms in contrasting flow environments
Environmental Microbiology, 16:802–812. doi: 10.1111/1462-2920.12205
- [a22] A. Knox, E. Bertuzzo, **L. Mari**, D. Odermatt, E. Verrecchia, A. Rinaldo (2014)
Optimizing a remotely-sensed proxy for plankton biomass in Lake Kivu
International Journal of Remote Sensing, 35:5219–5238. doi: 10.1080/01431161.2014.939782
- [a21] **L. Mari** (2014)
The Haiti cholera epidemic: from surveillance to action
Pathogen and Global Health, 108:3. doi: 10.1179/2047772413Z.000000000169
- [a20] L. Righetto, E. Bertuzzo, **L. Mari**, E. Schild, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo (2013)
Rainfall mediations in the spreading of epidemic cholera
Advances in Water Resources, 60:34–46. doi: 10.1016/j.advwatres.2013.07.006
- [a19] M. Gatto, **L. Mari**, E. Bertuzzo, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, A. Rinaldo (2013)
Spatially explicit conditions for waterborne pathogen invasion
The American Naturalist, 182:328–346. doi: 10.1086/671258

- [a18] S. Ceola, I. Hödl, M. Adlboller, G. Singer, E. Bertuzzo, **L. Mari**, G. Botter, J. Waringer, T.J. Battin, A. Rinaldo (2013)
Hydrologic variability affects invertebrate grazing on phototrophic biofilms in stream microcosms
PLoS ONE, 8:e60629. doi: 10.1371/journal.pone.0060629
- [a17] M. Gatto, **L. Mari**, E. Bertuzzo, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, A. Rinaldo (2012)
Generalized reproduction numbers and the prediction of patterns in waterborne disease
Proceedings of the National Academy of Sciences of the USA, 109:19703–19708.
doi: 10.1073/pnas.1217567109
- [a16] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo (2012)
On the role of human mobility in the spread of cholera epidemics: towards an epidemiological movement ecology
Ecohydrology, 5:531–540. doi: 10.1002/eco.262
- [a15] S. Suweis, E. Bertuzzo, **L. Mari**, I. Rodriguez-Iturbe, A. Maritan, A. Rinaldo (2012)
On species persistence-time distributions
Journal of Theoretical Biology, 303:15–24. doi: 10.1016/j.jtbi.2012.02.022
- [a14] A. Rinaldo, E. Bertuzzo, **L. Mari**, L. Righetto, M. Blokesch, M. Gatto, R. Casagrandi, M. Murray, S. Vesenbeckh, I. Rodriguez-Iturbe (2012)
Reassessment of the 2010–2011 Haiti cholera outbreak and rainfall-driven multi-season projections
Proceedings of the National Academy of Sciences of the USA, 109:6602–6607.
doi: 10.1073/pnas.1203333109
- [a13] E. Bertuzzo, **L. Mari**, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo (2012)
Hydroclimatology of dual-peak annual cholera incidence: insights from a spatially explicit model
Geophysical Research Letters, 39:L05403. doi: 10.1029/2011GL050723
- [a12] L. Righetto, R. Casagrandi, E. Bertuzzo, **L. Mari**, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo (2012)
The role of aquatic reservoir fluctuations in long-term cholera patterns
Epidemics, 4:33–42. doi: 10.1016/j.epidem.2011.11.002
- [a11] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo (2012)
Modeling cholera epidemics: the role of waterways, human mobility and sanitation
Journal of the Royal Society Interface, 9:376–388. doi: 10.1098/rsif.2011.0304
- [a10] A. Rinaldo, M. Blokesch, E. Bertuzzo, **L. Mari**, L. Righetto, M. Murray, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe (2011)
A transmission model of the 2010 cholera epidemic in Haiti
Annals of Internal Medicine, 155:403–404. doi: 10.1059/0003-4819-155-6-201109200-00018
- [a09] **L. Mari**, E. Bertuzzo, R. Casagrandi, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo (2011)
Hydrologic controls and anthropogenic drivers of the zebra mussel invasion of the Mississippi-Missouri river system
Water Resources Research, 47:W03523. doi: 10.1029/2010WR009920
- [a08] E. Bertuzzo, **L. Mari**, L. Righetto, M. Gatto, R. Casagrandi, M. Blokesch, I. Rodriguez-Iturbe, A. Rinaldo (2011)
Prediction of the spatial evolution and effects of control measures for the unfolding Haiti cholera outbreak
Geophysical Research Letters, 38:L06403. doi: 10.1029/2011GL046823
- [a07] E. Bertuzzo, S. Suweis, **L. Mari**, A. Maritan, I. Rodriguez-Iturbe, A. Rinaldo (2011)
Spatial effects on species persistence and implications for biodiversity
Proceedings of the National Academy of Sciences of the USA, 108:4346–4351.
doi: 10.1073/pnas.1017274108

- [a06] **L. Mari**, R. Casagrandi, M.T. Pisani, E. Pucci, M. Gatto (2009)
When will the zebra mussel reach Florence? A model for the spread of *Dreissena polymorpha* in the Arno water system (Italy)
Ecohydrology, 2:428–439. doi: 10.1002/eco.71
- [a05] **L. Mari**, M. Gatto, R. Casagrandi (2009)
Central-place seed foraging and vegetation patterns
Theoretical Population Biology, 76:229–240. doi: 10.1016/j.tpb.2009.08.001
- [a04] **L. Mari**, C. Biotto, A. Decoene, L. Bonaventura (2009)
A coupled eco-hydrodynamic model for the spatiotemporal dynamics of sessile species in thermally forced basins
Ecological Modelling, 220:2310–2324. doi: 10.1016/j.ecolmodel.2009.05.012
- [a03] **L. Mari**, R. Casagrandi, M. Gatto, T. Avgar, R. Nathan (2008)
Movement strategies of seed predators as determinants of vegetation patterns
The American Naturalist, 172:694–711. doi: 10.1086/591687
- [a02] **L. Mari**, M. Gatto, R. Casagrandi (2008)
Local resource competition and the skewness of the sex ratio: a demographic model
Mathematical Biosciences and Engineering, 5:813–830. doi: 10.3934/mbe.2008.5.813
- [a01] R. Casagrandi, **L. Mari**, M. Gatto (2007)
Modelling the local dynamics of the zebra mussel (*Dreissena polymorpha*)
Freshwater Biology, 52:1223–1238. doi: 10.1111/j.1365-2427.2007.01761.x
- Submitted*
- E. Bertuzzo, **L. Mari** (Aug 2017)
Hydrology, water resources and the epidemiology of water-related diseases
- L. Mari**, R. Casagrandi, A. Rinaldo, M. Gatto (Aug 2017)
Epidemicity thresholds for water-borne and water-related diseases
- L. Carraro, E. Bertuzzo, **L. Mari**, I. Fontes, H. Hartikainen, N. Streppareva, H. Schmidt-Posthaus, T. Wahli, J. Jokela, M. Gatto, A. Rinaldo (Aug 2017)
An integrated field, laboratory and theoretical study of PKD spread in a Swiss prealpine river
- D. Pasetto, S. Arenas-Castro, J. Bustamante, R. Casagrandi, N. Chrysoulakis, A.F. Cord, A. Ditttrich, C. Domingo, G. El Sarafy, A. Karnieli, G. Kordelas, I. Manakos, **L. Mari**, A. Monteiro, E. Palazzi, D. Poursanidis, A. Rinaldo, S. Terzago, A. Ziemba, G. Ziv (Aug 2017)
Integration of satellite Earth observations in ecosystem modelling: practices and trends
- Conferences**
- [c93] **L. Mari**, M. Ciddio, S.H. Sokolow, G.A. De Leo, M. Gatto, R. Casagrandi
A multidimensional network model for the spatial dynamics of schistosomiasis
XXVII Congresso della SItE, Napoli, September 12–15 2017
- [c92] L. Carraro, **L. Mari**, M. Gatto, A. Rinaldo, E. Bertuzzo
A metacommunity model for the spread of proliferative kidney disease in stream networks
IECID 2017, Trieste, Italy, May 17–19 2017
- [c91] F. Finger, T. Genolet, **L. Mari**, G.C. de Magny, A. Rinaldo, E. Bertuzzo
Modeling the spread of cholera using human mobility estimates derived from mobile phone records
IECID 2017, Trieste, Italy, May 17–19 2017
- [c90] F.J. Perez-Saez, T. Mandel, N. Ceperley, E. Bertuzzo, **L. Mari**, M. Gatto, A. Rinaldo
Incorporating the ecology of intermediate hosts of schistosomiasis into spatially explicit models of disease transmission in seasonal climates
IECID 2017, Trieste, Italy, May 17–19 2017
- [c89] **L. Mari**, F. Dagostin, L. Raffa, M. Ciddio, L. Righetto, M. Gatto, R. Casagrandi
Spatially explicit modeling of potential Ebola spread in Senegal
NetMob 2017, Milano, Italy, April 5–7 2017

- [c88] L. Righetto, **L. Mari**, M. Gatto and R. Casagrandi
Drivers of spatial heterogeneity of HIV prevalence in Senegal: disentangling key features of human activity and mobility
NetMob 2017, Milano, Italy, April 5–7 2017
- [c87] M. Gatto, E. Bertuzzo, L. Carraro, R. Casagrandi, **L. Mari**, P. Melià, A. Rinaldo
Connectivity and dynamics of space-explicit ecological and epidemiological systems under variable climate
INdAM Workshop: Mathematical Approach to Climate Change Impacts, Rome, Italy, March 13 – 17 2017
- [c86] R. Casagrandi, **L. Mari**, P. Melià, S. Frascetti, M. Gatto
Cross-scale effects of protecting *Posidonia oceanica* connectivity hotspots in the Mediterranean
1° Congresso nazionale congiunto SITE–UZI–SIB, Milano, Italy, August 30 – September 2 2016
- [c85] M. Ciddio, **L. Mari**, R. Casagrandi, M. Gatto
A schistosomiasis transmission model to study the effects of heterogeneity on human and snail prevalence
1° Congresso nazionale congiunto SITE–UZI–SIB, Milano, Italy, August 30 – September 2 2016
- [c84] **L. Mari**, R. Casagrandi, A. Rinaldo, M. Gatto
A novel anisotropic measure of the reactivity of ecological systems
1° Congresso nazionale congiunto SITE–UZI–SIB, Milano, Italy, August 30 – September 2 2016
- [c83] L. Righetto, **L. Mari**, M. Gatto, R. Casagrandi
Drivers of HIV prevalence in developing countries: evidence from mobile communication data and demographic surveys in Senegal
1° Congresso nazionale congiunto SITE–UZI–SIB, Milano, Italy, August 30 – September 2 2016
- [c82] G. Constantin de Magny, F. Finger, T. Genolet, **L. Mari**, N.M. Manga, A. Rinaldo, E. Bertuzzo
Modeling the role of mass gatherings in the spreading of cholera outbreaks in Senegal using human mobility estimates derived from mobile phone records
7th Vibrio conference, Roscoff Marine station, France, March 29 – April 1 2016
- [c81] M. Ciddio, **L. Mari**, R. Casagrandi, S.H. Sokolow, G. De Leo, M. Gatto
Human population movement and schistosomiasis transmission risk: the case study of Senegal
Epidemics 5, Clearwater Beach (FL), USA, December 1–4 2015
- [c80] F. Finger, T. Genolet, **L. Mari**, G. Constantin de Magny, A. Rinaldo, E. Bertuzzo
Modeling the spread of cholera using human mobility estimates derived from mobile phone records
Epidemics 5, Clearwater Beach (FL), USA, December 1–4 2015
- [c79] **L. Mari**, R. Casagrandi, E. Bertuzzo, F. Finger, A. Rinaldo, M. Gatto
Assessing the predictive ability of mechanistic models for the Haitian cholera epidemic
European Ecological Federation Conference/XXV Congresso della SItE, Rome, Italy, September 21–25 2015
- [c78] **L. Mari**, R. Casagrandi, M. Ciddio, M. Gatto
Floquet theory for seasonally forced models of waterborne pathogen transmission
European Ecological Federation Conference/XXV Congresso della SItE, Rome, Italy, September 21–25 2015
- [c77] T. Wahli, N. Strepparava, H. Schmidt-Posthaus, H. Segner, **L. Mari**, E. Bertuzzo, L. Carraro, A. Rinaldo, J. Holland, C.J. Secombes, J. Jokela, H. Hartikainen
Role of ecology, evolution and immunology for aquatic diseases in riverine landscapes: the case of proliferative kidney disease
17th EAFP International Conference on Diseases of Fish and Shellfish, Las Palmas de Gran Canaria, Spain, September 7–10 2015
- [c76] M. Ciddio, **L. Mari**, R. Casagrandi, S.H. Sokolow, G. De Leo, M. Gatto
The impact of human mobility on schistosomiasis in Senegal: an analysis via mobile phone data
9th European Congress on Tropical Medicine and International Health, Basel, Switzerland, September 6–10 2015

- [c75] J. Perez-Saez, **L. Mari**, E. Bertuzzo, T. Mande, N. Ceperley, S.H. Sokolow, G. De Leo, R. Casagrandi, M. Gatto, A. Rinaldo
Spatial patterns of schistosomiasis in Burkina Faso: relevance of human mobility and water resources development
9th European Congress on Tropical Medicine and International Health, Basel, Switzerland, September 6–10 2015
- [c74] L. Carraro, E. Bertuzzo, **L. Mari**, M. Gatto, N. Strepparava, H. Hartikainen, A. Rinaldo
An epidemic model for the interactions between thermal regime of rivers and transmission of Proliferative Kidney Disease in salmonid fish
EGU General Assembly, Vienna, Austria, April 12–17 2015
- [c73] F. Finger, A. Knox, E. Bertuzzo, **L. Mari**, D. Bompangue, M. Gatto, A. Rinaldo
Integrating remote sensing and spatially explicit epidemiological modeling
EGU General Assembly, Vienna, Austria, April 12–17 2015
- [c72] J. Perez-Saez, E. Bertuzzo, J.M. Frohlich, T. Mande, N. Ceperley, M. Sou, H. Yacouba, H. Maiga, S. Sokolow, G. De Leo, R. Casagrandi, M. Gatto, **L. Mari**, A. Rinaldo
Spatial patterns of schistosomiasis in Burkina Faso: relevance of human mobility and water resources development
EGU General Assembly, Vienna, Austria, April 12–17 2015
- [c71] **L. Mari**, R. Casagrandi, M. Ciddio, S.H. Sokolow, G. De Leo, M. Gatto
Uncovering the impact of human mobility on schistosomiasis via mobile phone data
NetMob 2015, Cambridge (MA), USA, April 8–10 2015
- [c70] M. Ciddio, **L. Mari**, M. Gatto, A. Rinaldo, R. Casagrandi
Impact of environmental conditions on snails dynamics and schistosomiasis transmission
IECID 2015, Sitges, Spain, March 23–25 2015
- [c69] A. Rinaldo, E. Bertuzzo, **L. Mari**, F. Finger, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe
On spatially explicit models of epidemic and endemic cholera: the Haiti and Lake Kivu case studies
AGU Fall Meeting, San Francisco (CA), USA, December 15–19 2014
- [c68] M. Ciddio, **L. Mari**, R. Casagrandi, M. Gatto
A model for schistosomiasis transmission accounting for infection age in snails: sensitivity and bifurcation analyses
XXIV Congresso della SItE, Ferrara, September 15–17 2014
- [c67] **L. Mari**, R. Casagrandi, E. Bertuzzo, A. Rinaldo, M. Gatto
A spatially explicit criterion for metapopulation persistence in river ecosystems
XXIV Congresso della SItE, Ferrara, September 15–17 2014
- [c66] E. Bertuzzo, F. Finger, **L. Mari**, M. Gatto, A. Rinaldo
On the probability of extinction of the Haiti cholera epidemic
EGU General Assembly, Vienna, Austria, April 27–May 2 2014
- [c65] F. Finger, B. Schaefli, E. Bertuzzo, **L. Mari**, A. Rinaldo
Parameter and uncertainty estimation for mechanistic, spatially explicit epidemiological models
EGU General Assembly, Vienna, Austria, April 27–May 2 2014
- [c64] A. Knox, C. Van der Hens, F. Finger, E. Bertuzzo, **L. Mari**, M. Blokesch, A. Rinaldo
Model-guided field validation: part of an integrated framework to improve cholera forecasts and interventions in Haiti
Life Sciences Switzerland Annual Meeting, Lausanne, Switzerland, January 4–5 2014
- [c63] F. Finger, E. Bertuzzo, **L. Mari**, A. Knox, M. Gatto, A. Rinaldo
Spatially explicit modelling of cholera epidemics
AGU Fall Meeting, San Francisco (CA), USA, December 9–13 2013
- [c62] F. Finger, E. Bertuzzo, **L. Mari**, A. Knox, M. Gatto, A. Rinaldo
Rainfall driven cholera outbreak modelling
Swiss Geoscience Meeting, Lausanne, CH, November 15–16 2013

- [c61] M. Ciddio, L. Righetto, **L. Mari**
The role of climatic variability on cholera spreading in Bangladesh
Conference of the Italian Society for Climate Sciences, Lecce, September 23–24 2013
- [c60] **L. Mari**, P. Melià, M. Gatto, A. Storto, M. Vichi, S. Masina, R. Casagrandi
Larval connectivity in the central Pacific Ocean: lagrangian simulations in the Northern Line Islands
Conference of the Italian Society for Climate Sciences, Lecce, September 23–24 2013
- [c59] E. Bertuzzo, **L. Mari**, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, M. Gatto, A. Rinaldo
Does space matter in cholera spreading?
XXIII Congresso della SItE, Ancona, September 16–18 2013
- [c58] F. Finger, E. Bertuzzo, **L. Mari**, A. Knox, L. Righetto, A. Rinaldo
Spatially explicit modelling of cholera epidemics
XXIII Congresso della SItE, Ancona, September 16–18 2013
- [c57] A. Knox, E. Bertuzzo, **L. Mari**, D. Bompangue, H. Sarmiento, D. Odermatt, E. Verrecchia, A. Rinaldo
Optical remote sensing in an eco-epidemiological study: The challenge of Lake Kivu, DRC
XXIII Congresso della SItE, Ancona, September 16–18 2013
- [c56] **L. Mari**, E. Bertuzzo, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto
Spatiotemporal invasion conditions for waterborne pathogens
XXIII Congresso della SItE, Ancona, September 16–18 2013
- [c55] **L. Mari**, P. Melià, M. Gatto, A. Storto, M. Vichi, S. Masina, R. Casagrandi
Assessing larval connectivity patterns in the Northern Line Islands: a long-term analysis with Lagrangian simulations
XXIII Congresso della SItE, Ancona, September 16–18 2013
- [c54] L. Righetto, E. Bertuzzo, **L. Mari**, R. Casagrandi, M. Gatto, A. Rinaldo
Vibrio cholerae in the waters of rural Bangladesh: from site-specific detection to population biology
XXIII Congresso della SItE, Ancona, September 16–18 2013
- [c53] L. Righetto, M. Ciddio, E. Bertuzzo, **L. Mari**, R. Casagrandi, A. Rinaldo, M. Gatto
A spatially explicit model of cholera spreading in Bangladesh: the role of climate and mobility
XXIII Congresso della SItE, Ancona, September 16–18 2013
- [c52] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto
Outbreak conditions for waterborne disease epidemics: data and models
S.Co. 2013 – Complex Data Modeling and Computationally Intensive Statistical Methods for Estimation and Prediction, Milano, IT, September 9–11 2013
- [c51] L. Righetto, R. Zaman, Z.H. Mahmud, E. Bertuzzo, **L. Mari**, R. Casagrandi, M. Gatto, M.S. Islam, A. Rinaldo, M. Blokesch
Field study of the ecology of *Vibrio cholerae* in the aquatic environment of rural Bangladesh
EMBO Conference on Aquatic Microbial Ecology: SAME13, Stresa, IT, September 8–13 2013
- [c50] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto
A criterion for waterborne pathogen invasion in spatially explicit and temporally fluctuating environments
INTECOL Congress, London, UK, August 18–23 2013
- [c49] E. Bertuzzo, **L. Mari**, L. Righetto, A. Knox, F. Finger, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Predicting the evolution of large cholera outbreaks: lessons learnt from the Haiti case study
EGU General Assembly, Vienna, Austria, April 7–12 2013
- [c48] S. Ceola, E. Bertuzzo, **L. Mari**, G. Botter, I. Hödl, T.J. Battin, M. Gatto, A. Montanari, A. Rinaldo
Hydrologic and light variability as drivers of stream biofilm-invertebrate dynamics
EGU General Assembly, Vienna, Austria, April 7–12 2013

- [c47] M. Ciddio, **L. Mari**, L. Righetto
A spatially explicit model of endemic cholera in Bangladesh: the role of hydroclimatological forcings
Theoretical Approaches and Related Mathematical Methods in Biology, Medicine and Environment, CIMAB and GASVA-SIMAI workshop, Milano, April 4–6 2013
- [c46] E. Bertuzzo, **L. Mari**, L. Righetto, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo
Hydroclimatology of dual-peak annual cholera incidence: insights from a spatially explicit model
AGU Fall Meeting, San Francisco (CA), USA, December 3–7 2012
- [c45] S. Ceola, I. Hödl, M. Adlboller, G. Singer, E. Bertuzzo, **L. Mari**, G. Botter, T.J. Battin, M. Gatto, A. Rinaldo
Hydrologic variability enhances stream biofilm grazing by invertebrates
AGU Fall Meeting, San Francisco (CA), USA, December 3–7 2012
- [c44] **L. Mari**, M. Gatto, E. Bertuzzo, R. Casagrandi, L. Righetto, I. Rodriguez-Iturbe, A. Rinaldo
A novel spatially-explicit condition for the onset of waterborne diseases in complex environments
AGU Fall Meeting, San Francisco (CA), USA, December 3–7 2012
- [c43] L. Righetto, E. Bertuzzo, **L. Mari**, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Rainfall-driven epidemic cholera: hydrologic controls on water-borne disease and multi-season projections
AGU Fall Meeting, San Francisco (CA), USA, December 3–7 2012
- [c42] A. Rinaldo, M. Gatto, **L. Mari**, R. Casagrandi, L. Righetto, E. Bertuzzo, I. Rodriguez-Iturbe
Spatially explicit models, generalized reproduction numbers and the prediction of patterns of waterborne disease
AGU Fall Meeting, San Francisco (CA), USA, December 3–7 2012
- [c41] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto
A novel condition for the onset of waterborne diseases in complex environments
XXII Congresso della SItE, Alessandria, September 10–13 2012
- [c40] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo, M. Gatto
An ecohydrological model of cholera dynamics
SIDISA 2012, Milan, Italy, June 26–29 2012
- [c39] E. Bertuzzo, **L. Mari**, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
An epidemic model for the future progression of the current Haiti cholera epidemic
EGU General Assembly, Vienna, Austria, April 22–27 2012
- [c38] S. Ceola, E. Bertuzzo, **L. Mari**, G. Botter, I. Hödl, T. Battin, A. Rinaldo
Hydrologic drivers and controls of stream biofilm-grazer interactions
EGU General Assembly, Vienna, Austria, April 22–27 2012
- [c37] L. Righetto, S. Islam, Z.H. Mahmud, E. Bertuzzo, **L. Mari**, R. Casagrandi M. Gatto, I. Rodriguez-Iturbe, M. Blokesch, A. Rinaldo
Presence and viability of *V. cholerae* in the waters of rural Bangladesh (Matlab area)
EGU General Assembly, Vienna, Austria, April 22–27 2012
- [c36] T.J. Battin, I. Hödl, E. Bertuzzo, **L. Mari**, S. Suweis, A. Rinaldo
The biogeodynamics of microbial landscapes
AGU Fall Meeting, San Francisco (CA), USA, December 5–9 2011
- [c35] E. Bertuzzo, **L. Mari**, L. Righetto, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe, A. Rinaldo
A spatially explicit model for the future progression of the current Haiti cholera epidemic
AGU Fall Meeting, San Francisco (CA), USA, December 5–9 2011
- [c34] S. Ceola, E. Bertuzzo, **L. Mari**, G. Botter, I. Hödl, T.J. Battin, A. Rinaldo
Assessing the role of hydrologic variability in stream nutrient processing and transport
AGU Fall Meeting, San Francisco (CA), USA, December 5–9 2011
- [c33] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Hydrologic transport, human mobility and the spread of cholera epidemics: insights from a spatially explicit model
XXI Congresso della SItE, Palermo, October 3–6 2011

- [c32] L. Righetto, R. Casagrandi, E. Bertuzzo, **L. Mari**, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Modeling environmental drivers of cholera seasonality in Bengal endemic areas
European Conference on Ecological Modeling, Riva del Garda, Italy, May 30–June 2 2011
- [c31] E. Bertuzzo, **L. Mari**, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
A spatially distributed model for the future evolution of the current Haiti cholera outbreak
EGU General Assembly, Vienna, Austria, April 3–8 2011
- [c30] S. Ceola, G. Botter, E. Bertuzzo, **L. Mari**, I. Rodriguez-Iturbe, A. Rinaldo
Hydrologic controls on river trophic dynamics
EGU General Assembly, Vienna, Austria, April 3–8 2011
- [c29] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Hydrological transport, human mobility and cholera epidemics: a spatially explicit modeling approach
EGU General Assembly, Vienna, Austria, April 3–8 2011
- [c28] A. Rinaldo, E. Bertuzzo, **L. Mari**, L. Righetto, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe
Reactive transport on multiscale networks: controls and drivers of large-scale cholera outbreaks
EGU General Assembly, Vienna, Austria, April 3–8 2011
- [c27] S. Suweis, E. Bertuzzo, **L. Mari**, A. Maritan, I. Rodriguez-Iturbe, A. Rinaldo
Scaling and universality of species lifetimes
EGU General Assembly, Vienna, Austria, April 3–8 2011
- [c26] E. Bertuzzo, **L. Mari**, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Hydroclimatology of dual peak cholera incidence in Bengal region: inferences from a spatial explicit model
AGU Fall Meeting, San Francisco (CA), USA, December 13–17 2010
- [c25] R. Casagrandi, **L. Mari**, E. Bertuzzo, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo
Drivers and controls of the zebra mussel invasion of the Mississippi-Missouri river system
AGU Fall Meeting, San Francisco (CA), USA, December 13–17 2010
- [c24] **L. Mari**, E. Bertuzzo, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Human mobility patterns and cholera epidemics: a spatially explicit modeling approach
AGU Fall Meeting, San Francisco (CA), USA, December 13–17 2010
- [c23] S. Ceola, G. Botter, E. Bertuzzo, **L. Mari**, I. Rodriguez-Iturbe, A. Rinaldo
Ecohydrological streamflow distributions and hydraulic food chain models
AGU Fall Meeting, San Francisco (CA), USA, December 13–17 2010
- [c22] L. Righetto, E. Bertuzzo, **L. Mari**, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
The role of the aquatic reservoir in long-term cholera dynamics
AGU Fall Meeting, San Francisco (CA), USA, December 13–17 2010
- [c21] A. Rinaldo, E. Bertuzzo, **L. Mari**, L. Righetto, M. Gatto, R. Casagrandi, I. Rodriguez-Iturbe
On spatially explicit models of cholera epidemics: hydrologic controls, environmental drivers, human-mediated transmissions
AGU Fall Meeting, San Francisco (CA), USA, December 13–17 2010
- [c20] L. Righetto, E. Bertuzzo, **L. Mari**, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Ecohydrological drivers of cholera spreading along fluvial systems
Water and health: where science meets policy, Chapel Hill (NC), USA, October 25–26 2010
- [c19] E. Bertuzzo, **L. Mari**, L. Righetto, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo.
Spreading of cholera through surface water
LATSIS Symposium 2010, Lausanne, Switzerland, October 17–20 2010
- [c18] **L. Mari**, E. Bertuzzo, R. Casagrandi, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo
Drivers and controls of the zebra mussel invasion of the Mississippi-Missouri river system
LATSIS Symposium 2010, Lausanne, Switzerland, October 17–20 2010
- [c17] L. Righetto, E. Bertuzzo, **L. Mari**, R. Casagrandi, M. Gatto, I. Rodriguez-Iturbe, A. Rinaldo
Ecohydrologic drivers and controls for cholera epidemics
LATSIS Symposium 2010, Lausanne, Switzerland, October 17–20 2010

- [c16] S. Suweis, E. Bertuzzo, A. Maritan, **L. Mari**, I. Rodriguez-Iturbe, A. Rinaldo
Diversity and geography of species lifetimes
LATSIS Symposium 2010, Lausanne, Switzerland, October 17–20 2010
- [c15] **L. Mari**, E. Bertuzzo, R. Casagrandi, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo
Modeling the spread of the zebra mussel in the Mississippi-Missouri river system: a multi-layer network approach
XX Congresso della SItE, Roma, September 27–30 2010
- [c14] **L. Mari**, E. Bertuzzo, R. Casagrandi, M. Gatto, S.A. Levin, I. Rodriguez-Iturbe, A. Rinaldo
A multi-layer network model for the zebra mussel invasion of the Mississippi-Missouri river system
SIMAI 2010, Joint SIMAI/SEMA Conference on Applied and Industrial Mathematics, Cagliari, June 21–25 2010
- [c13] L. Righetto, E. Bertuzzo, **L. Mari**, R. Casagrandi, M. Gatto, A. Rinaldo
Hydroclimatological and anthropogenic drivers for cholera spreading
European Geosciences Union General Assembly 2010, Wien, Austria, May 2–7 2010
- [c12] **L. Mari**, R. Casagrandi, M. Gatto
Social foraging and the formation of plant recruitment patterns
White Workshop on Mathematical Biology, Trento, Italy, December 17–19 2009
- [c11] **L. Mari**, Giuliano Bonanomi, Marino Gatto, Francesco Giannino, Stefano Mazzoleni, Renato Casagrandi
Plant-soil negative feedbacks and the formation of Janzen–Connell recruitment patterns
XIX Congresso della SItE, Bolzano, September 15–18 2009
- [c10] M. Gatto, P. Melià, **L. Mari**, R. Casagrandi
Movement and life cycles: the paradigmatic cases of European eel and zebra mussel
69° Congresso Nazionale dell’Unione Zoologica Italiana, Senigallia, September 22–25 2008
- [c09] **L. Mari**, L. Bonaventura
Modeling the spatiotemporal dynamics of sessile aquatic species: coupling ecological and hydrodynamic models
XVIII Congresso della SItE, Parma, September 1–3 2008
- [c08] M.T. Pisani, E. Pucci, **L. Mari**, R. Casagrandi, M. Gatto
Will the zebra mussel (*Dreissena polymorpha*) reach Florence along the Arno River? Results from a mechanistic network model
XVIII Congresso della SItE, Parma, September 1–3 2008
- [c07] **L. Mari**, R. Casagrandi, M. Gatto
A PDE model for central-place foraging of dispersed seeds
XVII Congresso della SItE, Ancona, September 17–20 2007
- [c06] R. Casagrandi, **L. Mari**, M. Gatto
A demographic model for the local dynamics of *Dreissena polymorpha*
VI Congresso Nazionale della Società Italiana di Biometria, Pisa, June 20–22 2007
- [c05] **L. Mari**, R. Casagrandi, M. Gatto
Un modello per la dinamica del mitilo zebra (*Dreissena polymorpha*)
MUA2007, Congresso del Centro Interuniversitario per la Matematica Applicata a Biologia, Medicina, Ambiente (CIMAB), Montecatini Terme, March 29–31 2007
- [c04] **L. Mari**, M. Gatto, R. Casagrandi
Rapporto sessi sbilanciato e competizione locale per le risorse
XVI Congresso della SItE, Viterbo-Civitavecchia, September 19–22 2006
- [c03] **L. Mari**, T. Avgar, R. Casagrandi, R. Nathan, M. Gatto
A spatially explicit approach to seed dispersal and predation
XVI Congresso della SItE, Viterbo-Civitavecchia, September 19–22 2006
- [c02] **L. Mari**, R. Casagrandi, M. Gatto
Predicting and controlling zebra mussels outbreaks in freshwater ecosystems: a nonlinear demographic model
Modeling Approaches in Biodiversity Research, Sede Boqer, Israel, March 19–23 2006

- [c01] R. Casagrandi, **L. Mari**, C. Baranzelli, A. Caimi, M. Gatto
A model for the population dynamics and control of zebra mussels (*Dreissena polymorpha*, Pallas)
XIV Congresso della SItE, Siena, October 4–6 2004
- Other publications**
- [o10] **L. Mari**, R. Casagrandi, M. Ciddio, S.H. Sokolow, G. De Leo, M. Gatto (2015)
Uncovering the impact of human mobility on schistosomiasis via mobile phone data
Data for Development Challenge Senegal – Book of Abstracts: Scientific Papers
Available online at <http://www.d4d.orange.com/>
- [o09] J. Perez-Saez, F. Finger, **L. Mari**, A. Rinaldo, E. Bertuzzo (2015)
Human mobility and the spreading of waterborne diseases
Data for Development Challenge Senegal – Book of Abstracts: Scientific Papers
Available online at <http://www.d4d.orange.com/>
- [o08] M. Gatto, **L. Mari**, A. Rinaldo (2013)
Leading eigenvalues and the spread of cholera
SIAM News, Volume 46, Number 7, September 2013
- [o07] M. Gatto, **L. Mari**, A. Rinaldo (2012)
Modelli spazio-temporali di diffusione, previsione e controllo delle epidemie di colera: dal Sudafrica ad Haiti
Rendiconti dell'Istituto Lombardo Accademia di Scienze e Lettere, 145:47–57
- [o06] **L. Mari** (2009)
Models for Movement Ecology
PhD thesis in Information Technology, PoliMi, A.Y. 2008/2009.
Advisor: Prof. R. Casagrandi; co-advisor: Prof. M. Gatto
- [o05] L. Bonaventura, C. Biotto, A. Decoene, **L. Mari**, E. Miglio (2009)
A coupled biological and hydrodynamic model for the spatial distribution of aquatic species in thermally forced basins
MOX Report 2009.2, Dipartimento di Matematica “F. Brioschi”, PoliMi
- [o04] **L. Mari**, R. Casagrandi, M. Gatto (2008)
A model for the spread of the zebra mussel (*Dreissena polymorpha*) on the Arno River
PhDAY, June 26 2008, DEIB, PoliMi. Best paper candidate
- [o03] **L. Mari**, L. Bonaventura (2007)
The impact of hydrodynamics on the spatial distribution of an aquatic species: a numerical study
Internal report 2007.60, DEIB, PoliMi
- [o02] **L. Mari** (2005)
Modelli spazialmente espliciti per la dinamica di popolazioni animali: la determinazione genetica del rapporto sessi
MSc thesis in Environmental Engineering, PoliMi, A.Y. 2004/2005
Advisor: Prof. M. Gatto; co-advisor: Prof. R. Casagrandi
- [o01] **L. Mari** (2003)
Ruolo di sostanze tossiche in un modello di competizione algale
BSc thesis in Environmental Engineering, PoliMi, A.Y. 2002/2003
Advisor: Prof. A. Gagnani

Involvement in research programs

- 2017 – Project manager for the project “MApping Schistosomiasis Transmission Risk in Saint-Louis, Senegal (MASTR-SLS)” (Polisocial Award, principal investigator: Prof. R. Casagrandi)
- 2016 – Project “Improving future ecosystem benefits through earth observation (ECOPOTENTIAL)” (European Commission H2020, principal investigator: Prof. A. Provenzale, Consiglio Nazionale delle Ricerche), PoliMi research unit (principal investigators: Prof. R. Casagrandi and Prof. M. Gatto)

2015 – 2016	Project “Uncovering the impact of human mobility on schistosomiasis via mobile phone data” (Bill & Melinda Gates Foundation, principal investigator: Prof. M. Gatto)
2014 – 2015	Project “Towards coast to coast networks of marine protected areas (COCONET)” (European Commission FP7, principal investigator: Prof. F. Boero, Università del Salento), CoN-ISMa/PoliMi research unit (principal investigator: Prof. M. Gatto)
2014	Project “Temperature driven emergence of Proliferative Kidney Disease in salmonid fish” (SNSF, principal investigator: Dr. H. Hartikainen), EPFL research unit (principal investigator: Prof. A. Rinaldo, ECHO/EPFL)
2014	Project “Santé des populations: maladies d’origine hydrique” (Swiss Agency for Development and Cooperation, principal investigator: Prof. A. Rinaldo)
2012 – 2014	Project “Dynamics and controls of large-scale cholera outbreaks (DYCHO)” (SNSF project 138104, principal investigator: Prof. A. Rinaldo)
2012 – 2013	Project “Climate Change Assessment in Small Pacific Islands States” (Comune di Milano, principal investigator: Prof. R. Casagrandi)
2009 – 2013	Project “River networks as ecological corridors for biodiversity, populations and waterborne disease (RINEC)” (ERC project 227612, principal investigator: Prof. A. Rinaldo)
2009 – 2013	Project “Hydrologic controls on ecological processes: river networks as corridors for biodiversity, populations and pathogens of water-borne diseases” (SNSF project 124930, principal investigator: Prof. A. Rinaldo)
2007	Project “Internazionalizzazione del Sistema Universitario” (Interlink II O4 CE 4968, MIUR), PoliMi research unit (“Conseguenze ed impatti dei cambiamenti climatici globali sulla gestione e conservazione delle risorse naturali”); principal investigator: Prof. M. Gatto)
2006–2007	Project “Reti autorganizzanti di tipo cellulare e dinamiche non lineari caotiche per la modellizzazione ed il controllo di sistemi complessi” (FIRB2001-RBNE01CW3M, MIUR; principal investigator: Prof. L. Fortuna, Università degli Studi di Catania), PoliMi research unit (“Reti dinamiche non lineari: analisi e applicazioni”); principal investigator: Prof. S. Rinaldi, DEIB, PoliMi)

Invited seminars, talks and workshops

May 2017	Disease dynamics on river and human mobility networks: implications for control NIMBioS workshop on optimal control of NTDs, University of Tennessee (Knoxville TN, US)
Jan 2017	Spatially explicit modeling of schistosomiasis transmission dynamic. PoliMi (Milano, Italy)
Jan 2016	Modeling cholera epidemics: theoretical approach and real-world applications. PoliMi (Milano, Italy)
April 2015	Uncovering the impact of human mobility on schistosomiasis via mobile phone data. NetMob 2015, Massachusetts Institute of Technology (Cambridge MA, US)
Jan 2015	Spatially explicit models for schistosomiasis transmission. Hopkins Marine Station of Stanford University (Pacific Grove CA, US)
Jun 2014	Ecological hydrological modeling and waterborne disease epidemics. NIMBioS investigative workshop on leptospirosis modeling, University of Tennessee (Knoxville TN, US)
Dec 2013	The spread of the invasive species <i>Dreissena polymorpha</i> along river networks. Università degli Studi di Milano (Milano, Italy)
Nov 2011	Drivers and controls of the zebra mussel invasion of the Mississippi-Missouri river system. Eawag (Dübendorf, Switzerland)
Dec 2008	Bifurcation and chaos in a demographic model for the dynamics of the zebra mussel <i>Dreissena polymorpha</i> . PoliMi (Milano, Italy)

- Apr 2007 | On the role of toxicants in a model for algal competition. PoliMi (Milano, Italy)
- May 2006 | A demographic model for *Dreissena polymorpha*: local dynamics, prediction and control. PoliMi (Milano, Italy)

Teaching activities

As lecturer

- Academic Year 2017–2018 | “Geo Fundamentals 1” (5 credits)
Master Degree in Geoinformatics, PoliMi
“Industrial Ecology” (8 credits)
Master Degree in Energy Engineering, PoliMi (Campus Piacenza)
- A.Y. 2016–2017 | “Geo Fundamentals 1” (5 credits)
Master Degree in Geoinformatics, PoliMi
“General Ecology” (4 credits)
Master Degree in Sustainable Architecture and Landscape Design, PoliMi (Campus Piacenza)
- A.Y.’s 2014–2016 | “Ecology and Sustainability” (6 credits)
Master Degree in Environmental Engineering, PoliMi (Campus Como)
- A.Y.’s 2012–2014 | “Ecology and Sustainability” (6 credits)
Master Degree in Environmental Engineering, PoliMi (Campus Como)
“Analisi dei Sistemi II” (5 credits)
Bachelor Degree in Environmental Engineering, PoliMi (Campus Como)
- A.Y. 2011–2012 | “Conservation Ecology and Sustainability” (6 credits)
Master Degree in Environmental Engineering, PoliMi (Campus Como)
- As teaching assistant**
- A.Y. 2014–2015 | “Global Change and sustainability”, Alta Scuola Politecnica (4 hours)
- A.Y. 2013–2014 | “Water Resources Engineering”, Prof. A. Rinaldo (20 hours)
Master Degree in Environmental Sciences and Engineering, EPFL
“Global Change and sustainability”, Alta Scuola Politecnica (4 hours)
- A.Y. 2012–2013 | “Water Resources Engineering”, Prof. A. Rinaldo (20 hours)
Master Degree in Environmental Sciences and Engineering, EPFL
“Ecologia”, Prof. R. Casagrandi (10 hours)
Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi
“Global Change and sustainability”, Alta Scuola Politecnica (4 hours)
- A.Y. 2011–2012 | “Conservazione e Gestione degli Ecosistemi”, Prof. M. Gatto (20 hours)
Corso di Laurea Magistrale in Ingegneria per l’Ambiente e il Territorio, PoliMi
“Water Resources Engineering”, Prof. A. Rinaldo (20 hours)
Master Degree in Environmental Sciences and Engineering, EPFL
- A.Y.’s 2009–2011 | “Water Resources Engineering”, Prof. A. Rinaldo (20 hours)
Master Degree in Environmental Sciences and Engineering, EPFL

A.Y. 2008–2009	<p>“Modelling and Simulation”, Prof. G. Guariso (DEIB, PoliMi) (40 hours) Master Degree in Environmental Engineering, PoliMi (Campus Como)</p> <p>“Ecologia 1”, Prof. R. Casagrandi (20 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi (Campus Como)</p> <p>“Ecology 2”, Prof. R. Casagrandi (4 hours) Master Degree in Environmental Engineering, PoliMi (Campus Como)</p> <p>“Global Change and sustainability”, Alta Scuola Politecnica (4 hours)</p> <p>“Modellistica e Controllo dei Sistemi Ambientali 1”, Prof. A. Gragnani (4 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi</p> <p>“Modellistica e Controllo dei Sistemi Ambientali 2”, Prof. A. Gragnani (4 hours) Corso di Laurea Magistrale in Ingegneria per l’Ambiente e il Territorio, PoliMi</p>
A.Y. 2006–2007	<p>“Ecologia 1”, Prof. R. Casagrandi (20 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi (Campus Como)</p> <p>“Ecologia 1 con Laboratorio”, Prof. M. Gatto (5 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi</p> <p>Other teaching activities</p>
2017	<p>“Analysis of Complex Networks: Theory and Applications”, Prof. C. Piccardi (lecturer, 2 hours) PhD Program in Information Technology, DEIB, PoliMi</p>
2013	<p>“Spatial Dynamics in Biology”, Prof. M. Gatto (lecturer, 2 hours) PhD Program in Information Technology, DEIB, PoliMi</p>
2011	<p>“Spatial Dynamics in Biology”, Prof. M. Gatto (lecturer, 2 hours) PhD Program in Information Technology, DEIB, PoliMi</p>
2009–2014	<p>Co-advisor of MSc theses, Master Degree in Environmental Sciences and Engineering, EPFL</p>
2008	<p>“Ecologia 1 con Laboratorio”, Prof. M. Gatto (lab tutor, 20 hours) Corso di Laurea in Ingegneria per l’Ambiente e il Territorio, PoliMi</p>
2006–	<p>Co-advisor of BSc and MSc theses, Corso di Laurea (Magistrale) in Ingegneria per l’Ambiente e il Territorio, PoliMi</p>
Academic service	
2017–	<p>Tutoring and Web Coordination Boards, MSc in Geoinformatics Engineering, School of Civil, Environmental and Land Management Engineering, PoliMi</p>
2016–2017	<p>Guest Editor for the Special Issue “Hydrology, water resources and the epidemiology of water-related diseases”, <i>Advances in Water Resources</i> (http://www.journals.elsevier.com/advances-in-water-resources/call-for-papers/special-issue-call-for-papers-hydrology-water-resources-and/)</p>
2009–	<p>Acting as reviewer for <i>Advances in Water Resources</i>, <i>Annals of Epidemiology</i>, <i>Applied Mathematical Modelling</i>, <i>Applied Mathematics and Computation</i>, <i>Aquatic Invasions</i>, <i>Chaos, Solitons & Fractals</i>, <i>Computer Methods and Programs in Biomedicine</i>, <i>Communications in Nonlinear Science and Numerical Simulation</i>, <i>Continental Shelf Research</i>, <i>Discrete Dynamics in Nature and Society</i>, <i>Ecological Modelling</i>, <i>Ecology Letters</i>, <i>Epidemiology</i>, <i>Environmental Modelling and Software</i>, <i>Freshwater Biology</i>, <i>Freshwater Science</i>, <i>Fundamental and Applied Limnology</i>, <i>Journal of Animal Ecology</i>, <i>Journal of Biological Dynamics</i>, <i>Journal of Ecology</i>, <i>Journal of Neuroinfectious Diseases</i>, <i>Journal of Statistical Mechanics</i>, <i>Journal of Theoretical Biology</i>, <i>Mathematics and Computers in Simulation</i>, <i>Methods in Ecology and Evolution</i>, <i>PLoS Neglected Tropical Diseases</i>, <i>Proceedings of the National Academy of Sciences of the USA</i>, <i>Risk Management and Healthcare Policy</i>, <i>Public Health</i>, <i>Water Policy</i>, <i>Water Resources Research</i>, the Fulbright Commission, and the US National Science Foundation</p>

Scientific membership

2010–2012	Member of the American Geophysical Society (AGU) and European Geosciences Society (EGU)
2008	Member of the European Association of Environmental and Resource Economists (EAERE)
2006–	Member of the SIte

Milano, August 30, 2017

Lorenzo Mari