



University of Pavia

Ph.D. School of Electrical and Electronics Engineering and Computer Science

SEMINAR

Modelling population distribution and characteristics for health and vulnerability assessments

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Aula Seminari ex Dip. Elettronica, D Floor

Abstract: Information about the spatial distribution of human population is essential in any health or vulnerability assessment, for example to derive populations at risk and disease burden estimates or to model the spread of infectious diseases. However, our knowledge of human population distribution in space and time remains poor, especially in low income countries. Existing population distribution datasets are tied to census data that often are lacking, are of poor quality, or become outdated rapidly. Modelling methods are therefore needed for the production of contemporary and spatially detailed population data. Such methods combine various existing geospatial datasets, including satellite-derived and crowdsourcing data to better inform on the spatial distribution of populations. The Worldpop project initially aimed to process and disseminate human population spatial data in developing countries at a 100m spatial resolution, and has now expanded to distribute data on human movement patterns. The presentation will synthesize the latest developments in the production of multi-temporal population density maps, and will highlight the challenges that need to be tackled, particularly when working in low income settings, and the opportunities for health and development applications.

Bio: Catherine Linard graduated in Geographical Sciences at the Université catholique de Louvain (UCL, Belgium) in 2005. She completed her PhD thesis on spatial and integrated modelling of complex disease systems at the Department of Geography of the UCL in January 2009 and was then visiting researcher for 4 months at the University of Oxford. She was then a post-doctoral fellow of the Wiener-Anspach Foundation for two years at the Department of Zoology of the University of Oxford, followed by four years (2011-2015) as post-doctoral fellow at the ULB. She is now sharing her time between an half-time academic position at the department of Geography of the University of Namur and a half-time researcher position at the ULB. Catherine is interested in integrated approaches to spatial issues in epidemiology. She combines different methods and tools (e.g. Geographical Information Systems, spatial statistics and models, high resolution remote sensing) for a spatial and integrated approach to various disease systems, especially vector-borne and zoonotic diseases (e.g. malaria, dengue, avian influenza). Her current research activities focus on human population distribution predictions, urban expansion models for Africa and the impact of population distribution changes on health and vulnerability. She also produces and updates high-resolution population distribution maps for African countries.

Organizers

Dr. A. Marinoni and Prof. P. Gamba

Ph.D. Coordinator

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Seminar in English

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