



UNIVERSITÀ DEGLI STUDI DI MILANO
DIPARTIMENTO DI SCIENZE DELLA TERRA
"ARDITO DESIO"



UNIVERSITY OF
Southampton
Geography and Environment



The Po Plain Experiment (POPLEX) Field Campaign **Effects of urban sprawl on environmental matrices in northern Italy**

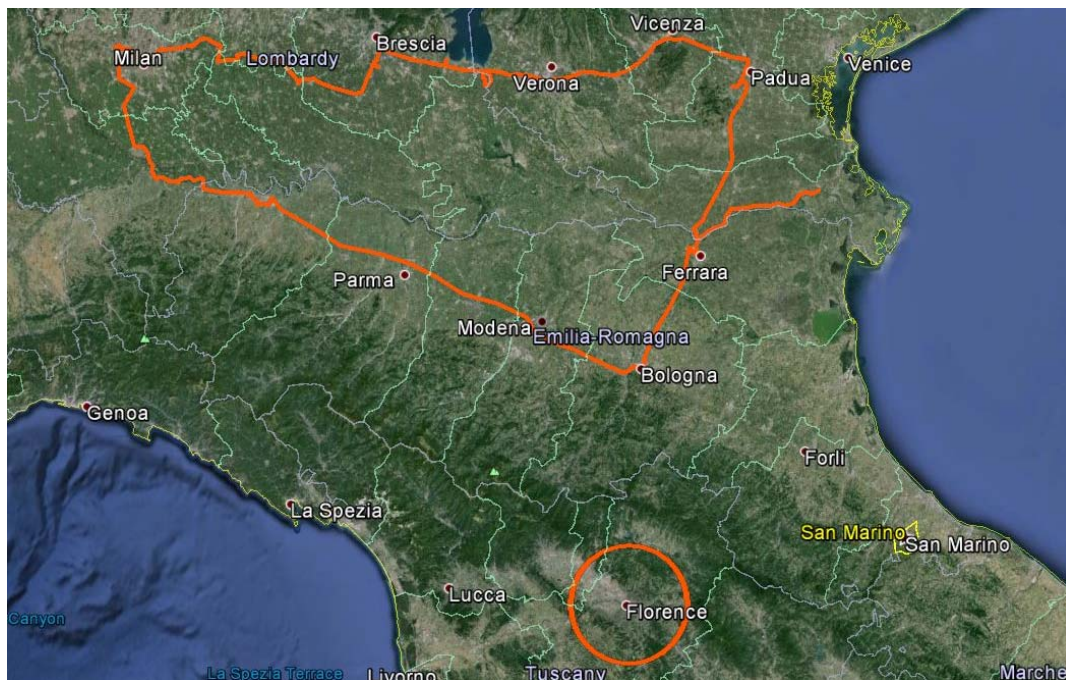
The “Dipartimento di Scienze della Terra” of “Università degli Studi di Milano,” together with the NASA Jet Propulsion Laboratory, California Institute of Technology, under the InterDisciplinary Science (IDS) research on Mega Urban Changes and Impacts supported by the NASA Land-Cover / Land-Use Change (LCLUC) Program, in collaboration with “Università degli Studi di Padova”, “Alma Mater Studiorum Università di Bologna” and the “Department of Geography and Environment” of “University of Southampton”, under the Patronage of Italian Chapter of International Association of Hydrogeologists, organize a field campaign, including science-team working meetings in conjunction with field surveys and measurements in the Po Plain territory (Northern Italy) to investigate effects of urban sprawl on environmental matrices in the area.

Innovative processing and use of satellite data have allowed a successful development of a spatially and temporally consistent dataset delineating urban extension and thus to monitor the annual rate of urban changes, in each pixel of a 1-km grid, for the decade of 2000s. Moreover, the massive amount of

high-quality satellite data products enables quantitative evaluations of environmental changes over large areas in a time and space continuum without gaps. The advantage of the Po Plain area is that extended monitoring networks of groundwater and air quality as well as meteorological observations are available and can be jointly used with satellite data to validate and improve their reliability. All of these data can be effectively used to estimate impacts of urbanization also in developed areas and can serve as crucial inputs to investigate the relationship between land use change and (a) groundwater contamination (from field monitoring), (b) air pollution, and (c) air and surface temperature (from field monitoring and satellite data). The campaign will consist of field excursions covering a large area of the Po plain, together with a Science Program for a series of working meetings in three Italian Universities.

Furthermore, the field campaign will be extended beyond the Po Plain to include Florence in Tuscany, Italy, so that POPLEX results can be cross-verified and extended to different regions.

POPLEX Itinerary



Science Program

Tuesday, May 6th

Venue: Dipartimento di Geoscienze, Università degli Studi di Padova, Via Gradenigo 6, Padova

H. 15.30 Marco Pola, Università degli Studi di Padova, "Urban sprawl in the Euganean Geothermal field and its relationship with thermal water exploitation"

H. 16.30 Son Nghiem, NASA JPL, "Dense Sampling Method Using the Rosette Transform for Satellite Observations of Urban Changes and Impacts in the 2000s – The Po Plain Study"

Thursday, May 8th

Venue: Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Alma Mater Studiorum Università di Bologna, Via Zamboni 67, Bologna

H. 15.00 Son Nghiem, NASA JPL, "Dense Sampling Method Using the Rosette Transform for Satellite Observations of Urban Changes and Impacts in the 2000s – The Po Plain Study"

H.16.00 Maria Filippini, Alma Mater Studiorum Università di Bologna, "Unlined disposal of industrial wastes in urban areas (Po Plain, northern Italy): source and fate of contaminants along with potential impacts against human health"

H. 16.30 Marco Deserti, ARPA Emilia Romagna "Air quality and monitoring in the Emilia Romagna region"

Monday, May 12th

Venue: Dipartimento di Scienze della Terra, Università degli Studi di Milano, Via Mangiagalli 34, Milan

H 15.30 Son Nghiem, NASA JPL, "Dense Sampling Method Using the Rosette Transform for Satellite Observations of Urban Changes and Impacts in the 2000s – The Po Plain Study"

H 16.30 Alessandro Sorichetta, University of Southampton: "The Mega Urban change in the Beijing Area and its Environmental Impact"

List of participants

Institution	Name	Contact	Role
Università degli Studi di Milano	Marco Masetti	marco.masetti@unimi.it	POPLEX Coordinator, and overall Lead
Università degli Studi di Milano	Stefania Stevenazzi	stefania.stevenazzi@unimi.it	Satellite imaging, GIS and data analysis
Università degli Studi di Milano	Alessio Conforto	alessio.conforto@unimi.it	GIS, GPS and field measurements
Università degli Studi di Milano	Marianna Bonfanti	marianna.bonfanti@unimi.it	GIS, GPS and field measurements
NASA Jet Propulsion Laboratory	Son V. Nghiem	Son.V.Nghiem@jpl.nasa.gov +1-818-354-2982	U.S. Principal Investigator
University of Southampton	Alessandro Sorichetta	A.Sorichetta@soton.ac.uk	Investigator
Università degli Studi di Padova	Paolo Fabbri	paolo.fabbri@unipd.it	Lead for eastern Po plain
Università degli Studi di Padova	Marco Pola	marco.pola@unipd.it	Co-Lead for eastern Po Plain
Alma Mater Studiorum Università di Bologna	Alessandro Gargini	alessandro.gargini@unibo.it	Lead for central Po plain
Alma Mater Studiorum Università di Bologna	Maria Filippini	maria.filippini3@unibo.it	Contaminated sites in central Po Plain
Università degli Studi di Parma	Fulvio Celico	fulvio.celico@unipr.it	Co-Lead for central Po plain
ARPA Emilia Romagna	Marco Deserti	m.deserti@arpaemiliaromagna.it	Air quality central Po plain
Université libre de Bruxelles	Catherine Linard	linard.catherine@gmail.com	Urban changes studies
Microwave Remote Sensing Group, National Research Council–Institute of Applied Physics (IFAC-CNR)	Paolo Pampaloni	p.pampaloni@ifac.cnr.it	Florence region extension, Tuscany
IFAC-CNR	Simonetta Paloscia	s.paloscia@ifac.cnr.it	Florence region extension, Tuscany
Participations for satellite data acquisition and interpretation			
University of Bremen	Andreas Richter	richter@iup.physik.uni-bremen.de	GOME-2A/2B satellite for NO ₂ and O ₃
Columbia University	Christopher Small	csmall@columbia.edu	Landsat and VIIRS satellite images
University of Minnesota	Paul Morin	lpaul@umn.edu	High-resolution satellite imagery
University of Colorado	G. Robert Brakenridge	robert.brakenridge@colorado.edu	Satellite measurement of stream flow
NASA Goddard Space Flight Center	Dorothy Hall	dorothy.k.hall@nasa.gov	MODIS Rapid Response in near real time
NASA Jet Propulsion Laboratory	Gregory Neumann	Gregory.Neumann@jpl.nasa.gov +1-818-354-7273	Satellite scatterometer observations
NASA Jet Propulsion Laboratory	Lisa Nguyen	lisa.nguyen@jpl.nasa.gov +1-818-354-9490	Satellite data, mapping, and imagery support
NASA Jet Propulsion Laboratory	Thomas Kurosu	tkurosu@jpl.nasa.gov +1-818-354-2432	OMI/OMPS satellites for atmospheric chemistry