

Various applications of WUDAPT products

About the WUDAPT project

The World Urban Database and Access Port Tools (WUDAPT) initiative (www.wudapt.org) is a community-driven data collection initiative that draws upon the considerable network of urban climate scientists around the world. The ultimate goal of the WUDAPT project is to develop a detailed, open access, urban database for all major cities in the world, which will have value for many applications including planning for climate resilience, energy modeling, greenhouse gas assessment, etc.

At its core, WUDAPT describes the physical geography of cities by capturing information on urban form (e.g. building density) and function (e.g. energy demand) at a suitable scale for urban climate studies and modelling. The basic structure of cities is captured using the Local Climate Zones (LCZs) scheme, which categorizes natural and urban landscapes into distinctive types, each of which is recognizable from aerial and satellite imagery. Each LCZ is associated with a unique combination of urban parameter values that capture aspects of urban form and function that regulate the micro-climate.

Objectives and deliverables of this workshop

Various applications of WUDAPT products will be discussed and shared in this workshop. The invited speakers and core team members of WUDAPT will show how the WUDAPT products can be implemented in climate modeling simulations benefit climate-sensitive urban design and planning.

The focus of the workshop will be on the rapidly growing cities along One Belt One Road and on the C40 cities. The workshop goal is to use WUDAPT methods to provide a map of the urban landscapes of each city and assess their climate effects. This will serve as a useful reference and basis to local government and researchers for future urban development.

Invited speakers of WUDAPT core team members

- Dr. Benjamin Bechtel
Research Associate, Department of Earth Sciences, University of Hamburg, Germany
- Dr. Jason Ching
Senior Research Fellow, Institute for the Environment, University of North Carolina (Chapel Hill)
- Professor Gerald Mills
Associate Professor, School of Geography, Planning & Environment Policy, University College Dublin, Ireland
- Dr. Valéry Masson
Researcher, National Center for Meteorological Research, Météo-France, France
- Dr. Chao Ren
Associate Professor, School of Architecture, The Chinese University of Hong Kong
- Dr. Linda See
Research Scholar, Ecosystems Services and Management, International Institute for Applied Systems Analysis, Austria
- Dr. Natalie Theeuwes
Researcher, Meteorology and Air Quality, Environmental Sciences, Wageningen University, Netherlands

Workshop Details

Date: 5–6 December 2016 (Monday & Tuesday)

Time: 9:30am–5pm

Venue: Digital Scholarship Lab, University Library, The Chinese University of Hong Kong, Sha Tin, New Territories, Hong Kong

Target participants: Postgraduate students, post-doctoral fellows, researchers, and faculty members.

Medium: English

Fee: Free. Overseas participants are expected to cover their own travel and accommodation expenses.

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Tentative Programme

5 December 2016, Monday

Theme: Application and Validation		
Time	Topic	Lecturer(s)
10:15-10:30	Global Database Launch Event: Opening Keynote Speeches	
	Ms Christine Loh: Opening Speech	
	Prof. Alexander Baklanov (WMO delegate)	
10:30-11:00	Introduction to WUDAPT and the current progress	Gerald
11:00-11:30	Invited Talk: Application of WUDAPT Products	Chao
11:30-11:45	Coffee break	
11:45-12:15	Invited Talk: Result Validation Methods and Accuracy Improvement	Benjamin
12:15-12:45	Invited Talk: City Cover and applications	Jason
12:45-14:00	Lunch	
14:00-15:00	Presentations & Discussions - Mapping Local Climate Zones for São Paulo Metropolitan Area, Brazil. (<i>Miss Luciana Schwandner Ferreira</i>) - Mapping Local Climate Zones for Campinas city, Brazil. (<i>Dr Alessandra Prata-Shimomura</i>) - WUDAPT: The global database of land use at local scales – Climatological applications in the developing world (<i>Dr. Richa Sharma</i>)	/
15:00-15:15	Coffee break	
15:15-16:15	Presentations & Discussions - Presentation (<i>Ms Bakul Budhiraja</i>) - Understanding transition between local to regional scale surface heat island effect using Urban neighbourhood housing typology (<i>Ms Surabhi Mehrotra</i>) - Urban studies for Budapest, Hungary using model simulations and observations (<i>Prof. Judit Bartholy</i>)	/

6 December 2016, Tuesday

Theme: Geography of Cities and Future Development of WUDAPT		
Time	Topic	Lecturer(s)
09:30-10:00	Invited Talk: Development of Portal Tools of WUDAPT	Linda
10:00-10:30	Coffee break	
10:30-12:00	Workshop: Running urban models	Gerald, Linda, Benjamin
12:00-13:00	Introduction to the portal tools	Gerald, Micheal
13:00-14:00	Lunch	
14:00-14:30	Perspectives for WUDAPT level 1 and 2: use of architectural archetypes	Valery
14:30-15:30	Geography of Cities and Urban Morphology Detection	Gerald
15:30-15:45	Coffee break	
15:45-17:00	Discussion & Conclusion: The way forward and road map	