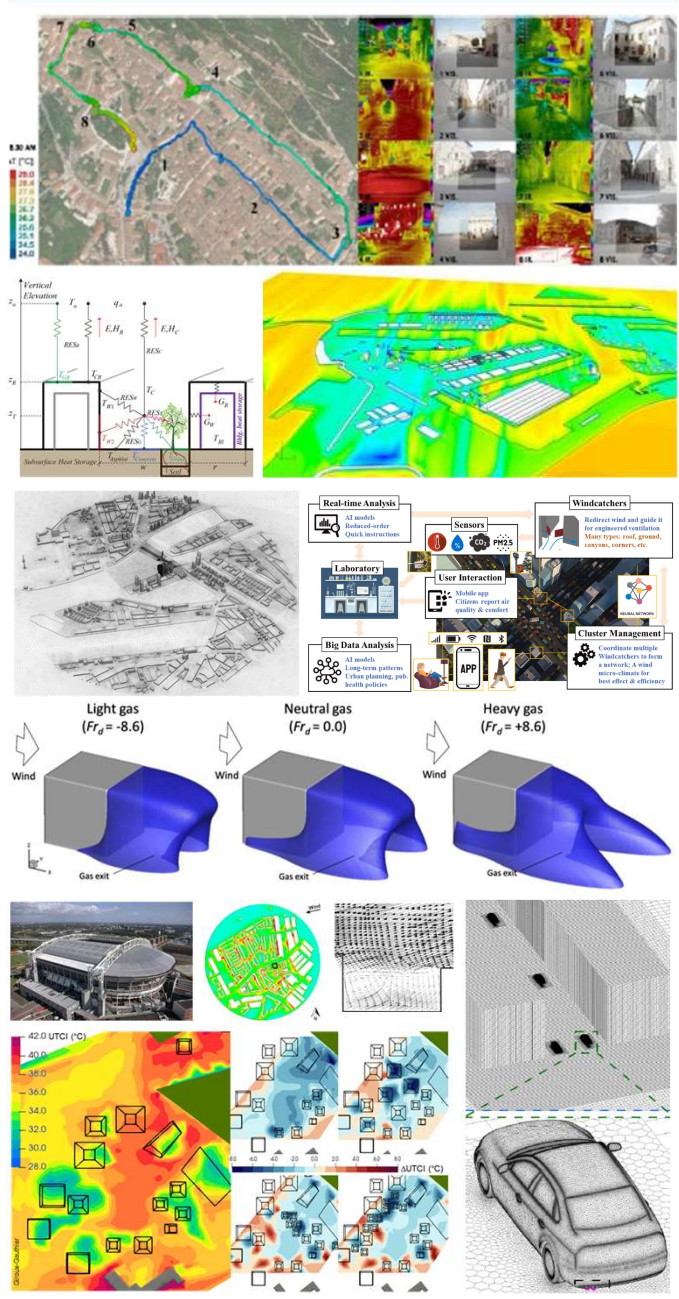


The Grand Societal Challenges



Topics



SCOPE

Urban Physics is the science and engineering of physical processes in urban areas. It basically refers to the transfer of heat and mass in the outdoor and indoor urban environment, and its interaction with humans, fauna, flora and materials. Urban Physics is a rapidly increasing focus area as it is key to understanding and addressing the **grand societal challenges** that are linked to sustainability: **climate change, energy, health, security, transport and ageing.** The main assessment tools in Urban Physics are field measurements, full-scale and reduced-scale laboratory measurements and numerical simulation including computational fluid dynamics (CFD) and building energy simulation (BES).

Urban Physics is intrinsically multidisciplinary and multiscale. **Topics** range from climate change over heat stress and cooling of cities and buildings to sustainable seaports and airports. In addition, this School will also include a session on the history of Albania and two informative and entertaining sessions on **academic publishing experiences** by scientific journal editors.

This edition of the Urban Physics School is organised by Heriot-Watt University (UK) in collaboration with ETH Zurich (Switzerland), Université de Sherbrooke (Canada) and IUSS Pavia (Italy), supported by local host Tirana University (Albania). It follows the previous successful editions of the School in the period 2011-2019.

The School is defined especially for PhD students, postdocs and young researchers & academic staff and intends to provide state-of-the-art knowledge in Urban Physics focused on its role in tackling the grand societal challenges. We look forward to welcoming you at this Autumn School to meet experts and colleagues working in this exciting field.

REGISTRATION

Participants can register by sending an email to b.blocken@hw.ac.uk. **Registration deadline is 1 September 2025. On-site and online attendance are possible. The school fee is 980 € per person for one-person room; 840 € pp for two-person room and 720 € pp for three-person room. Online attendance fee is 400 €.** Number of available rooms is limited. Fee covers course registration, course materials, accommodation (6 nights), welcome reception & half board (breakfasts & midday lunches). Instructions on the payment will be sent after registration via email. A letter of confirmation will be sent to the registered participants after the payment has been received. The number of on-site places are limited, and will be filled on a first-come, first-served basis.

Urban Physics Autumn School 2025

An International Specialised Workshop for PhD students, postdocs and young academic staff.
26 October – 1 November 2025
Golem, Albania + Online
www.urbanphysics.net/UPAS2025.htm

ORGANISERS/
LECTURERS

- Prof. Bert Blocken**
Heriot-Watt University, UK
- Prof. Jan Carmeliet**
ETH Zurich, Switzerland
- Prof. Dominique Derome**
Université de Sherbrooke, Canada
- Prof. Alessio Ricci**
IUSS Pavia, Italy

INVITED LECTURERS

- In alphabetical order**
- Ir. Mario Batarow**
Windtunnel24, Germany
 - Prof. Elie Bou-Zeid**
Princeton University, USA
 - Prof. Costin Cosoiu**
Tech. Univ. of Civil Engineering, Romania
 - Prof. Ana Ktona**
Tirana University, Albania
 - Prof. Cruz Li**
Chongqing University, China
 - Prof. Anna-Laura Pisello**
University of Perugia, Italy
 - Prof. Riccardo Buccolieri**
University of Salento, Italy
 - Prof. Mattheos Santamouris**
University of New South Wales, Australia
 - Prof. Ted Stathopoulos**
Concordia University, Canada
 - Prof. Yoshihide Tominaga**
Niigata Institute of Technology, Japan
 - Prof. Maarten van Reeuwijk**
Imperial College, UK
 - Prof. Sviatoslav Yutskevych**
Kyiv Aviation Institute, Ukraine

Lecturers and participants will stay together in the beautiful 5* Supreme Hotel at the beach in Golem, Albania. Because of its beauty, friendly people and affordable prices, Albania is often called the “new Croatia”, but of course Albania has its own great features, people and culture. The hotel offers single rooms, double rooms and triple rooms. Double and triple rooms are only recommended for participants that know each other well and are of the same gender.

More information on travel will be provided upon registration.



Organisers:

- Prof. Bert Blocken
- Prof. Jan Carmeliet
- Prof. Dominique Derome
- Prof. Alessio Ricci



Supported by:

- Prof. Ana Ktona



PROGRAMME CONTENT

I. Welcome to UPAS 2025 and Welcome to Albania

1. Welcome to UPAS 2025. Urban physics to tackle the grand societal challenges (Prof. Bert Blocken)
2. Welcome to Albania (Prof. Ana Ktona)

II. Urban Physics to tackle the Grand Societal Challenges

II.A. Impacts and Assessments

1. The impact of urban overheating on energy, environment, health, low-income population, productivity and cognitive performance (Prof. Mattheos Santamouris)
2. Aviation and the environment: a complex relationship (Prof. Sviatoslav Yutskevych)
3. The effects of exposure on wind velocity and wind pressure (Prof. Ted Stathopoulos)
4. Wind tunnel atmospheric boundary layer characterisation & wind energy applications (Prof. Costin Cosoiu)
5. Sound & noise: context and research on deaf children inclusion (Prof. Ana Ktona)
6. Creative design of large wind tunnels for advanced urban physics studies (Ir. Mario Batarow)

II.B. Methods – Part 1

1. Multisensory environments in the urban climate change context (Prof. Anna-Laura Pisello)
2. CFD for urban physics: basics (Prof. Bert Blocken)
3. Best practice guidelines in urban CFD (Prof. Yoshihide Tominaga)
4. Geometrical simplifications for CFD in the built environment (Prof. Alessio Ricci)
5. Modeling extreme winds in complex environments (Prof. Alessio Ricci)

II.C. Methods – Part 2

1. Urban microclimate modelling using a multiscale approach (Prof. Jan Carmeliet)
2. Wind tunnel testing (Prof. Ted Stathopoulos)
3. Understanding the urban surface energy balance: theory and high-fidelity simulations (Prof. Maarten van Reeuwijk)
4. The physics of urban canopy models (Prof. Elie Bou-Zeid)
5. Power of orthogonal decompositions in urban environment analysis (Prof. Cruz Li)

II.D. Mitigation & Adaptation

1. Future challenges of urban overheating & recent developments of heat mitigation (Prof. Mattheos Santamouris)
2. On the role of trees in urban physics (Prof. Dominique Derome)
3. Urban ventilation: assessing the impact of morphology on air quality and microclimate (Prof. Riccardo Buccolieri)

III. Academic Publishing in Scientific Journals

1. Editor’s expertise and tips for young authors and reviewers (Prof. Ted Stathopoulos)
2. Ten tips for a truly terrible journal article (Prof. Bert Blocken)

	Monday 27/10	Tuesday 28/10	Wednesday 29/10	Thursday 30/10	Friday 31/10	Saturday 1/11
08:30 - 09:45	Welcome & Intro <i>Blocken & Ktona</i>	Multiscale modelling <i>Carmeliet</i>	Urban energy - II <i>van Reeuwijk</i>	Creative wind tunnels <i>Batarow</i>	Geometries in CFD <i>Ricci</i>	Breakfast & Goodbye
09:45 - 11:00	Wind tunnel testing <i>Stathopoulos</i>	Trees in UP - I <i>Derome</i>	Overheating impact <i>Santamouris</i>	Urban ventilation <i>Buccolieri</i>	Aviation & Environment <i>Yutskevych</i>	
11:00 - 11:30	coffee / tea break	coffee / tea break	coffee / tea break	coffee / tea break	coffee / tea break	
11:30 - 12:45	Exposure effects <i>Stathopoulos</i>	Trees in UP - II <i>Derome</i>	Future heat mitigation <i>Santamouris</i>	Orthog. Decomp. <i>Li</i>	Wind tunnel application <i>Cosoiu</i>	
12:45 - 13:45	lunch break	lunch break	lunch break	lunch break	lunch break	
13:45 - 15:00	Participant Presentations	Participant Presentations		Best practice CFD <i>Tominaga</i>	Sound & noise <i>Ktona</i>	
15:00 - 16:15	CFD for UP - I <i>Blocken</i>	Multisens. Environ. <i>Pisello</i>		CFD for UP- II <i>Blocken</i>	Extreme winds <i>Ricci</i>	
16:15 - 16:45	coffee / tea break	coffee / tea break		coffee / tea break	coffee / tea break	
16:45 - 18:00	Editor’s expertise & tips <i>Stathopoulos</i>	Urban energy - I <i>van Reeuwijk</i>	Free	Urban canopy models <i>Bou-Zeid</i>	Tips for terrible article <i>Blocken</i>	