

ETH

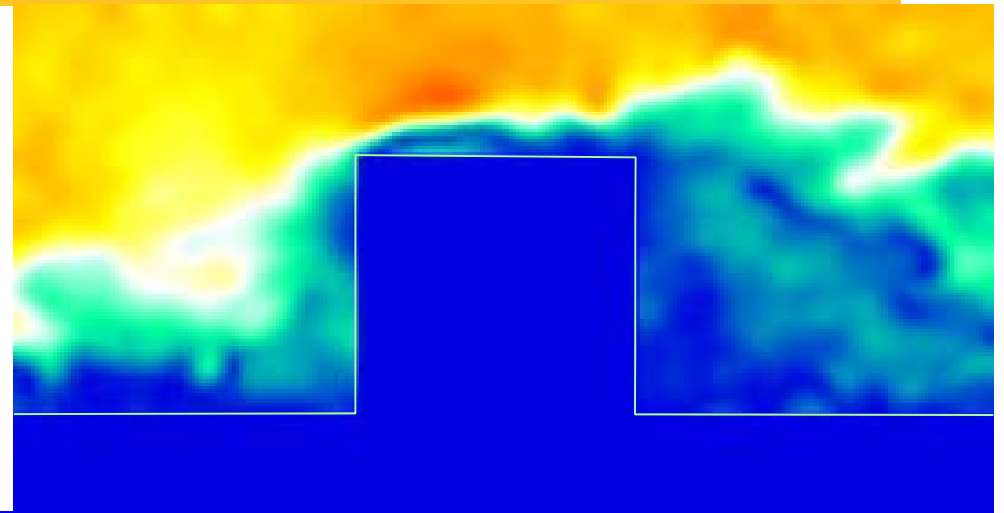
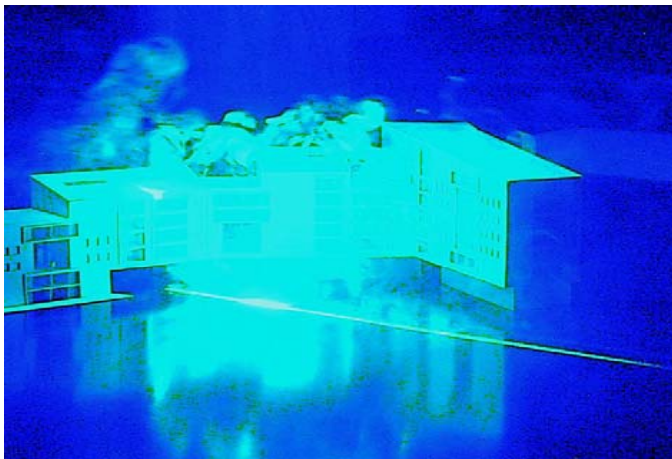
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich



Materials Science & Technology

Let the wind flow

Energy and Wind Research
for Future Cities and Societies

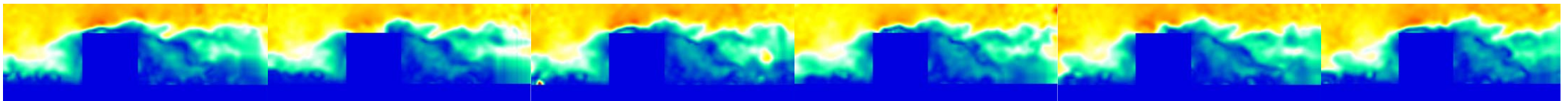


Energy
Science
Center

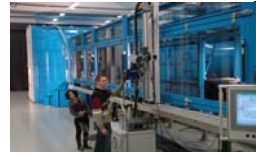


www.carmeliet.arch.ethz.ch/Events/WindTunnel

March 11th 2011, 13h30
Empa Dübendorf, Switzerland
at the occasion of the opening
of the ETH/Empa wind tunnel



Program

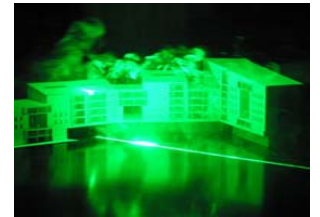


Energy and Wind Research for Future Cities and Societies

- 13h30 Prof. Dr. Gian-Luca Bona, Director of Empa
Empa's new engines for innovation
- 13h45 Prof. Dr. Marc Angéllil, Dean of the Department of Architecture, ETH Zurich
From courant d'air to hurricane
- 14h00 Dr. Bert Blocken, Eindhoven University of Technology, the Netherlands
Complementarity: wind tunnel experiments and CFD simulations in urban aerodynamics
- 14h30 Prof. Dr. Jeroen van Beeck, Von Karman Institute, Belgium
Wind research in the L-1 wind tunnel of the Von Karman Institute
- 15h00 Prof. Dr. Fernando Porté-Agel, EPFL
Large-eddy simulation of wind-turbine wakes
- 15h30 Prof. Dr. Konstantinos Boulouchos, Chairman of the Energy Science Centre Board, ETH Zurich
Energy and mobility in the urban environment – some research issues
- 16h00 Prof. Dr. Jan Carmeliet, ETH Zurich & Empa
Let the wind flow: opening of the wind tunnel
- 16h15 *Wind tunnel itinerary*
- 16h30 *Apéro*

Place: Empa Akademie, Dübendorf

There is a strong global trend towards urbanization. Urban heat island effects accentuated by global warming and pollutant dispersion may have detrimental impacts on the urban climate, human comfort and health, but also on the energy use of our buildings and cities. A major question, driving urban planners, economists, policy makers, and in particular researchers, goes to the heart of what makes a city sustainable, pollution free and healthy.



This necessitates innovative concepts of urban mobility to face increased traffic and pollution, and the development of an integrated set of urban modelling tools for the planning and management of energy and mass flows in smart cities throughout all scales of the city. In the fundamental understanding of urban physics we are still faced with a gap between climatologists predicting future weather patterns and building engineers striving to make buildings and cities more energy-efficient.

In this workshop, we address a rich pallet of wind related subjects, ranging from wind comfort, wind energy, pollutant dispersion, snow transport, wind driven rain to energy supply and mobility. Several building and environmental design examples will be given, such as the Antarctic station, the European parliament, the Amsterdam ArenA football stadium, gas dispersion in downtown Montreal and ship navigation in the sea canal Ria de Ferrol.

