

MTHC

Modeling Temperature and Humidity in Complex buildings

H2020 SOCIETAL CHALLENGES: Secure, clean and efficient energy;
PRODUCTIVE SECTOR: Energy efficiency

PROBLEM DESCRIPTION

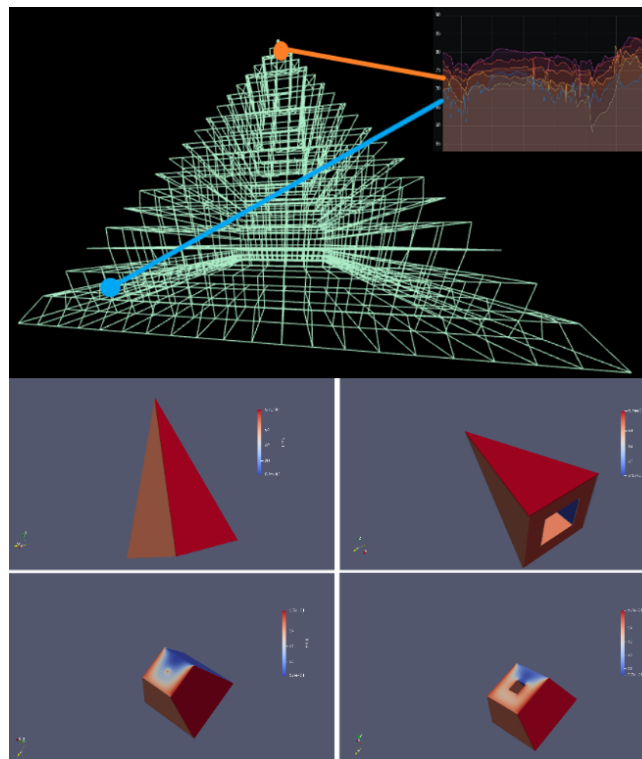
Provide numerical solutions of temperature and humidity fluxes in 3 buildings with integration of connected data. Use of these solutions to control efficiently temperature and humidity.

CHALLENGES AND GOALS

- Integration of connected data in real time.
- Efficient numerical implementation.
- Energetic control and optimization in complex environment.

MATHEMATICAL AND COMPUTATIONAL METHODS

Mathematical solutions based on statistical treatment of data, dynamical systems and optimization.



Numerical solutions of energetic fluxes with collected data from connected objects in a complex geometrical environment

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Results and Benefits

The collaboration allowed to collect a huge amount of data and compute solutions associated with the data and the physical geometry. This opens the path to concrete optimized solutions for an efficient control of the energetic problem in buildings with complex geometry. The methods can be generalized and extended to other problems.



More comfort and less cost.

Original mix of data collection in real time with connected objects, statistical and numerical implementation for optimized comfort with less energetic consumption.



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