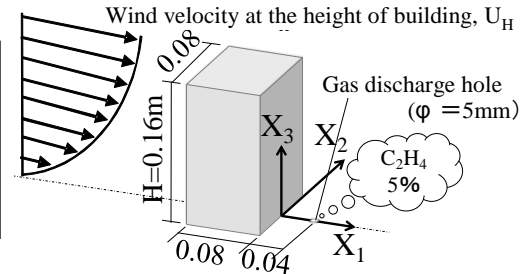


New Frontier of Education and Research in Wind Engineering

Research Topic:
LES simulation of gas dispersion in non-isothermal boundary layer flow.



1. Inflow turbulence generation technique for LES

Recently, LES model is more and more used in wind engineering. But one big problem preventing LES from being used is lacking appropriate inflow turbulence generation technique, especially in non-isothermal flow.

Here we introduce a method to generate inflow velocity and temperature fluctuation simultaneously. In wind tunnel experiment, our boundary layer profile is formed by some very thin triangular metal sheet instead of roughness blocks. And then a separate pre-simulation is run to simulate the whole wind tunnel to generate inflow data for LES simulation. This method was proved to be very efficient and easy to use in wind engineering.



姜国义

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Hometown:
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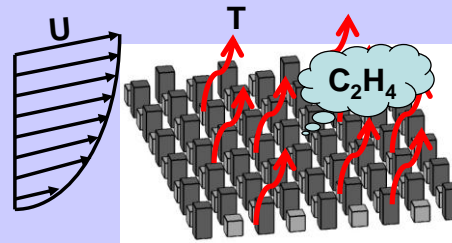
Profile study:
I earned master degree at Beijing Institute of Technology in 2006, The topic is on aerodynamic characteristic of flying vehicle.

2. Turbulence model performance research in non-isothermal and gas dispersion boundary layer flow

CFD simulation of gas dispersion behind a single building located in non-isothermal boundary layer was done. Different RANS model and LES with or without inflow turbulence were used. Our purpose is to assess the performance of turbulence model in the simulation of gas dispersion and non-isothermal boundary layer flow, and to clarify the influence of inflow turbulence to the simulation of this kind of flow when LES model is used.

3. LES simulation and wind tunnel experiment research on heat transport and gas dispersion in urban building group.

In recently years, air pollution and heat island phenomena is more serious in urban area. It was thought that improvement of natural ventilation maybe a countermeasure to these problem. Here both wind tunnel experiment and LES simulation were done to research on heat transport and gas dispersion phenomena in complex urban area.



Work experience:
(2006 – 2009)
CABR - China Academy of Building Research.

Prizes:
China awards for science and technology, second grade, 2008.

Research fields:
Wind Environment;
Air pollution;
Heat Island Phenomena;
LES Application;

Acknowledgment:
I am very thanks to Japan government and Global COE program to give me this chance to study in TPU. I am living very happy in Japan. I will give my best wishes to prof. Y Tamura, prof. R Yoshie, and all GCOE members who have worked here. Thanks for your help.

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