

CASTS Talk

Tree Canopy Modelling for the Environmental Flow Assessment

2015 - 11 - 24 (Tue.)

15:10 - 17:00

103, Mathematics Research Center Building (ori. New Math. Bldg.)

In the recent decade, investigations of the climate change impact are more and more important for the environmental modeling community. This kind of research always integrates multi-disciplinary fields with scientists from CFD, environmental, meteorology, energy, building engineering, and health care professions. With the assessment of integrated design tool, risk analysis & mitigation, we can then predict the building energy efficiency, air quality & health assessment for our urban planning analysis in the following decade.

In the context of Urban Physics, Computational Fluid Dynamics (CFD) is always used for investigation on the wind field in urban region. In this talk, I will firstly show some studies we have performed using CFD methodology in our ENV group. It is followed by describing the rationale for including the tree canopy, which is an important component for the recent urban planning and building design, in the CFD simulation. The basic model for the tree canopy will then be presented. Finally, I will show some preliminary results for the benchmarking problem and summarize some useful results that can be derived for urban planner and architect from this model.



CASTS

Center for Advanced Study in Theoretical Sciences, NTU