

New Frontier of Education and Research in Wind Engineering

INTERFERENCE EFFECTS ON LOCAL PEAK PRESSURES OF TWO ADJACENT TALL BUILDINGS

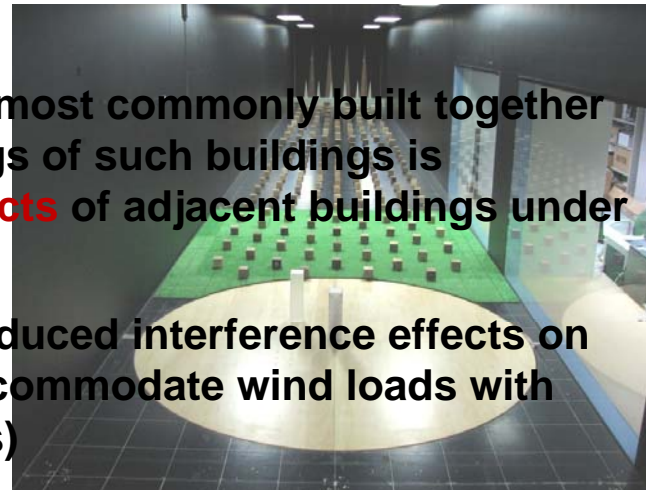
Introduction

High-rise apartment buildings are most commonly built together in groups, and damage to claddings of such buildings is increasing due to **interference effects** of adjacent buildings under strong winds

Few codes have referred to wind-induced interference effects on wind loads on buildings (Briefly accommodate wind loads with effects of neighboring tall buildings)

Main reasons:

- (1) Complex nature of the problem
- (2) Scarcity of adequate experimental data
- (3) Limitation conditions



Objective

The main aim of this study is to tackle the problem of **interference for local peak pressures on a tall building** in order to establish a generalized set of guidelines.



Name and Stand

Wonsul Kim
JSPS Fellow

Hometown
Suwon, Korea

Profile

Study

2007.09. ~ Present: Ph.D.
Candidate at Tokyo Polytechnic
University

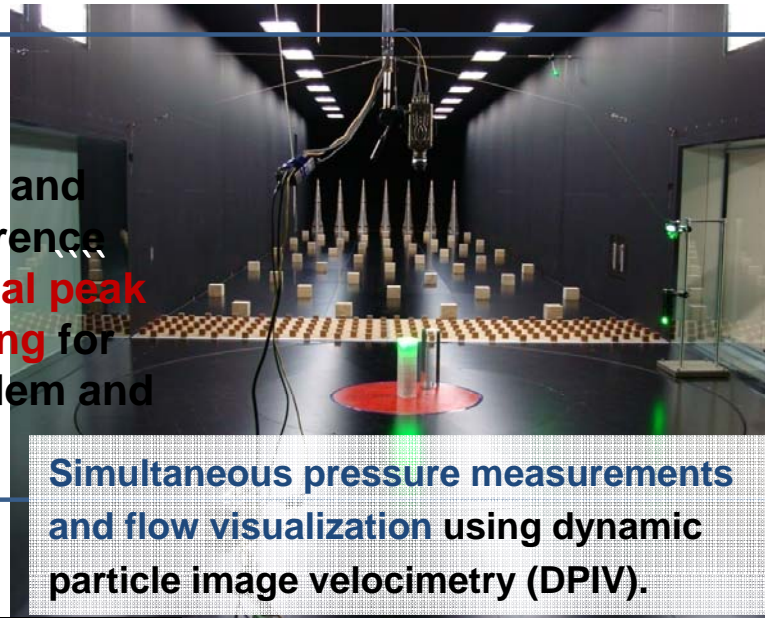
Work

2008.10~Present: JSPS Fellow,
at Tokyo Polytechnic University
2007.11~2008.03: Research
Assistant, 21st Century COE
Program at Tokyo Polytechnic
University

Flow visualization around two identical tall buildings

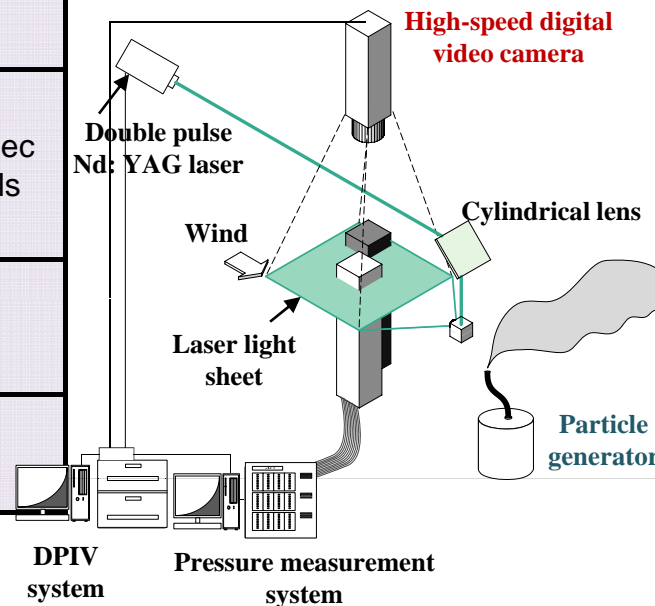
Objective

To obtain further information and understanding on the interference mechanism for **enhanced local peak pressures on building cladding** for worst wind directions in tandem and oblique arrangements



Simultaneous pressure measurements and flow visualization using dynamic particle image velocimetry (DPIV).

Equipment	System configuration	
High-speed digital video camera	Frame rate	: 4800frame / sec
	Number of pixels	: 800x600 pixels
Double pulse laser	Wavelength	: 532nm
	Repetition rate	: 1000Hz
Particle generator	Particle diameter	: 1 μ m



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Professional Interest:

Interference mechanism and interference effects on local peak pressures for grouped tall buildings, bluff body aerodynamics of tall buildings and wind tunnel experiments. With a strong understanding of the local peak pressures and overall wind loads on grouped tall buildings due to interference, I wish to apply this knowledge to the solution of practical problems in field and laboratory researches, such as design of structure and component and cladding of grouped tall buildings due to interference.

Qualifications

National Technical Qualification Certificate (Building Engineer License, Korea)