Wind Engineering Joint Usage/Research Center
FY2015 Research Result Report

Research Field: Wind Engineering
Research Period: FY2015～ FY2016
Research Number: 143002
Research Theme: Wind disaster and wind resistant design

Representative Researcher: Dr. Achal Kumar Mittal

Budget []: Yen 368,000

1. Research Aim

Study of wind-induced interference effects between high-rise buildings through wind tunnel experiments to produce experimental data for a database and also suggest empirical formulas for evaluating wind loads and responses between tall buildings for preliminary design purpose.

2. Research Method

To assess the wind-induced interfering effects between two buildings, wind tunnel experiments on a high-rise building model with various arrangements and different height ratios and side ratios of an interfering building which is additional interfering building model are carried out in a Boundary Layer Wind Tunnel at Tokyo Polytechnic University, Japan. For this study, the flow of the atmospheric boundary layer in the wind tunnel is interpreted as a geometrical scale of approximately 1:400. The approach flow represents an urban wind exposure with a power law exponent of 0.27.

3. Research Result : Attached in Annexure - I

4. Published Paper etc.
[Underline the representative researcher and collaborate researchers]
[Published papers]
[Presentations at academic societies]

1. Delivered a lecture to international participants on the topic **"Effect of Plan Ratio on Wind Interference of High Rise Buildings"** at one day workshop organized by JURC on 26th January 2016, TPU, Japan

[Published books]
Intellectual property rights, Homepage etc.

5. Research Organization
1. Representative Researcher : Dr. Achal Kumar Mittal

2. Collaborate Researchers :

1. Siddharth Behera
2. Sh. I.A. Siddiqui
3. Sh. Rajeev Kumar Sharma
4. Mickey Mecon Dalbehera