

Global COE Program: New Frontier of Education and Research in Wind Engineering

TOKYO POLYTECHNIC
UNIVERSITY

Wind Engineering
Research Center

OF NOTRE DAME

NatHaz Modeling
Laboratory



1583 Iiyama, Atsugi, Kanagawa, JAPAN 243-0297

Notre Dame, IN 46556, USA

March 6, 2013

New Frontier of Education and Research in Wind Engineering

General Report of TPU Global COE Program and Prospects

**Director
Yukio Tamura**

Global COE Program for Establishing World Apex Research Core

- Global Center of Excellence Program supported by Ministry of Education, Culture, Science, Sports and Technology (MEXT)
- Fourteen (14) groups in “Engineering” including civil engineering

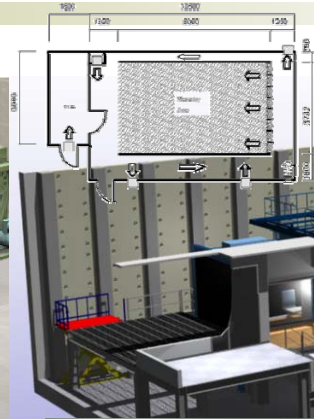
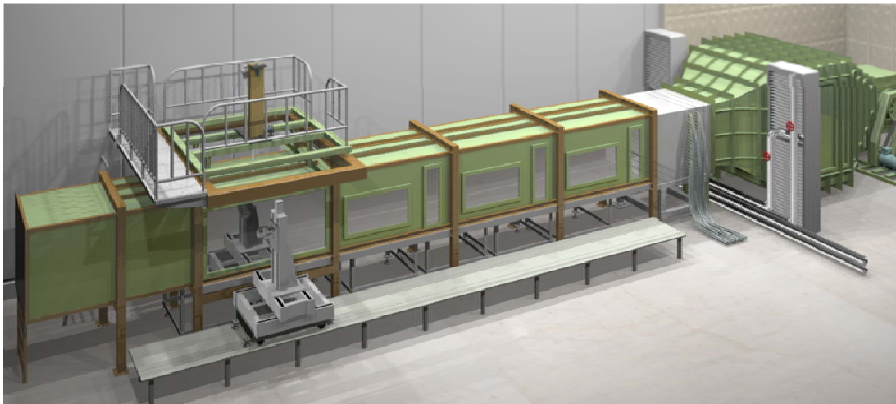
TPU: *New Frontier of Education and Research in Wind Engineering*

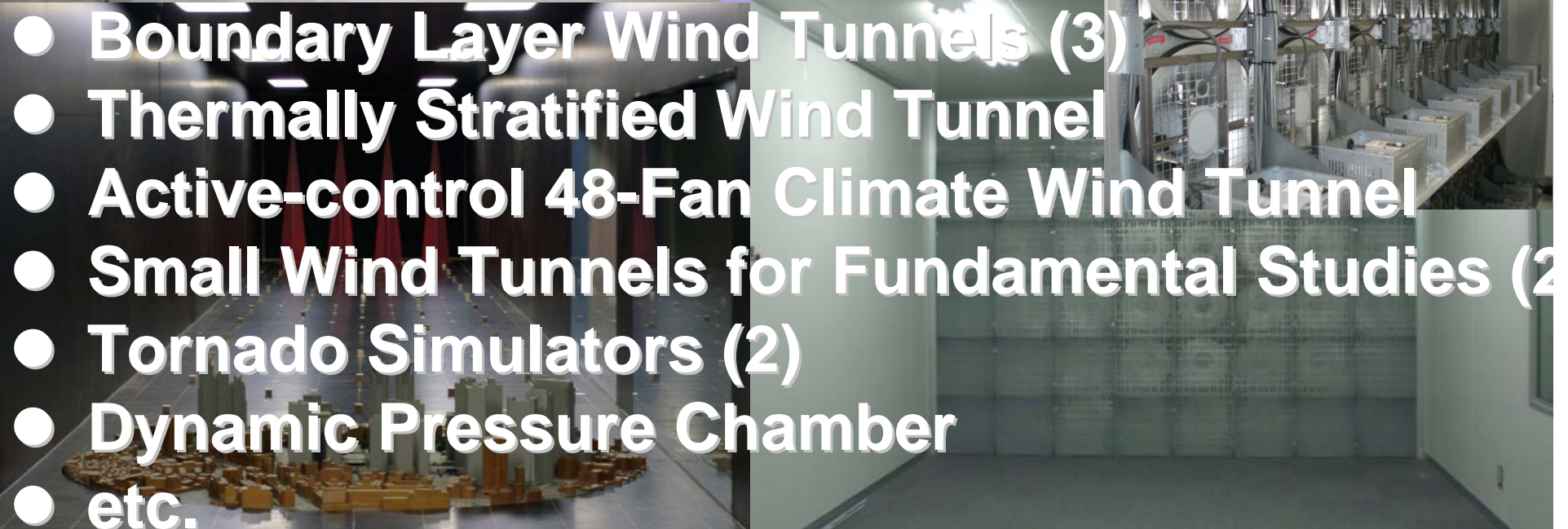
2008FY	2009FY	2010FY	2011FY	2012FY	
Jul'08	Mar, Apr'09	Mar, Apr'10	Mar, Apr'11	Mar, Apr'12	Mar'13

Structure of TPU Global COE

New Frontier of Education and Research in Wind Engineering





- 
- **Boundary Layer Wind Tunnels (3)**
 - **Thermally Stratified Wind Tunnel**
 - **Active-control 48-Fan Climate Wind Tunnel**
 - **Small Wind Tunnels for Fundamental Studies (2)**
 - **Tornado Simulators (2)**
 - **Dynamic Pressure Chamber**
 - **etc.**



TPU Global COE Members



Y. Tamura
Professor
(Director)



A. Kareem
Guest Professor
(Univ. Notre Dame)



M. Ohba
Professor
(N/C Ventilation)



R. Yoshie
Professor
(Air Pollution)



T. Ohno
Professor
(Construction)



K. Mizutani
Professor
(N.C Ventilation)



M. Matsui
Professor
(Structure)



A. Yoshida
Associate Professor
(Structure)



T. Ohkuma
Guest Professor
(Structure)



Y. Morita
Associate Professor
(Construction)

2010FY

Advisory Board

International External Evaluation

World Eminent Researchers

Prof. Hiroshi Akiyama]	University of Tokyo
Prof. Kishor Mehta	Texas Tech University
Prof. Robert Meroney	Colorado State University
Prof. Shuzo Murakami	Building Research Institute
Prof. Giovanni Solari	University of Genova
Prof. Haifan Xiang	Tongji University

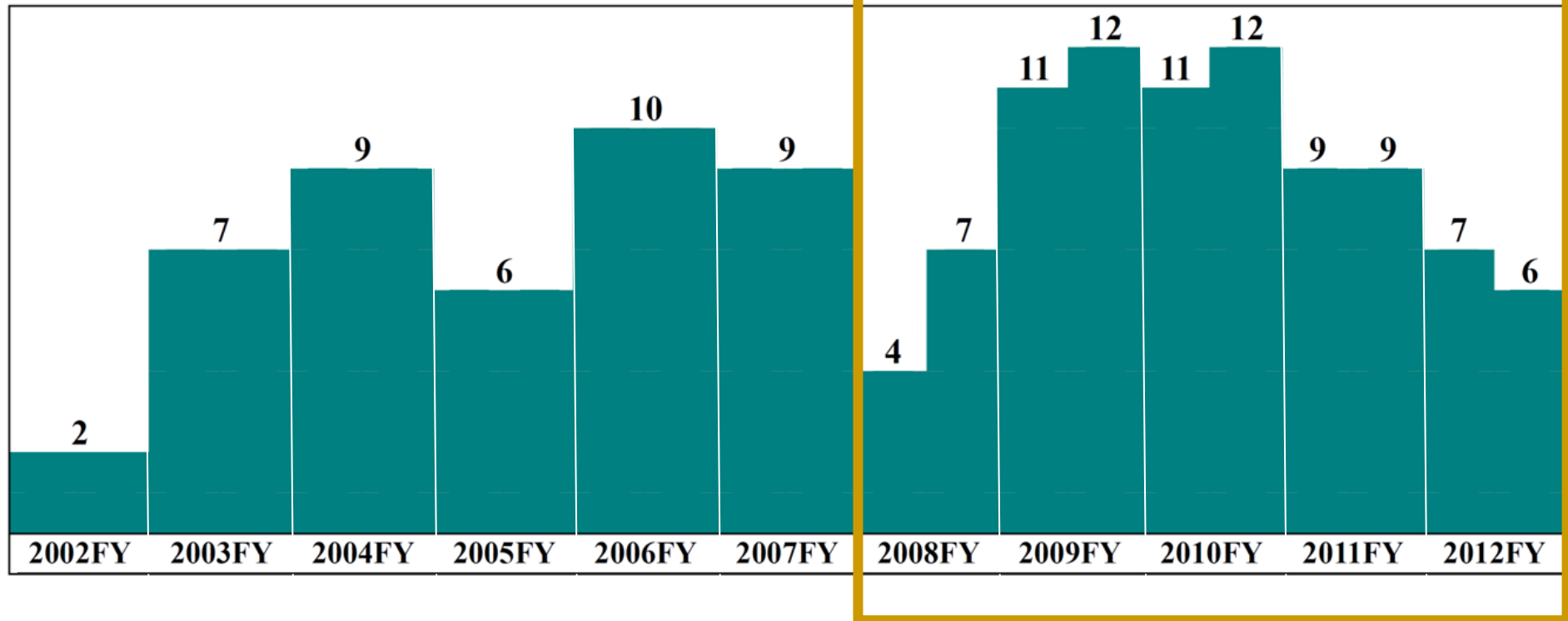


Annual Meeting



Yearly Variation of Post Doctoral Fellows

Global COE

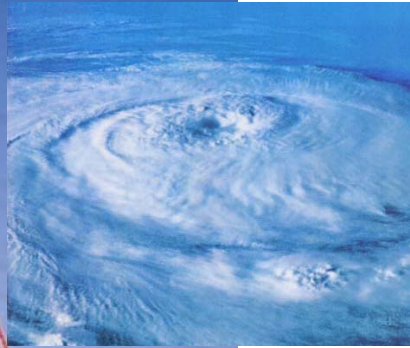


New Frontier of Education and Research in Wind Engineering

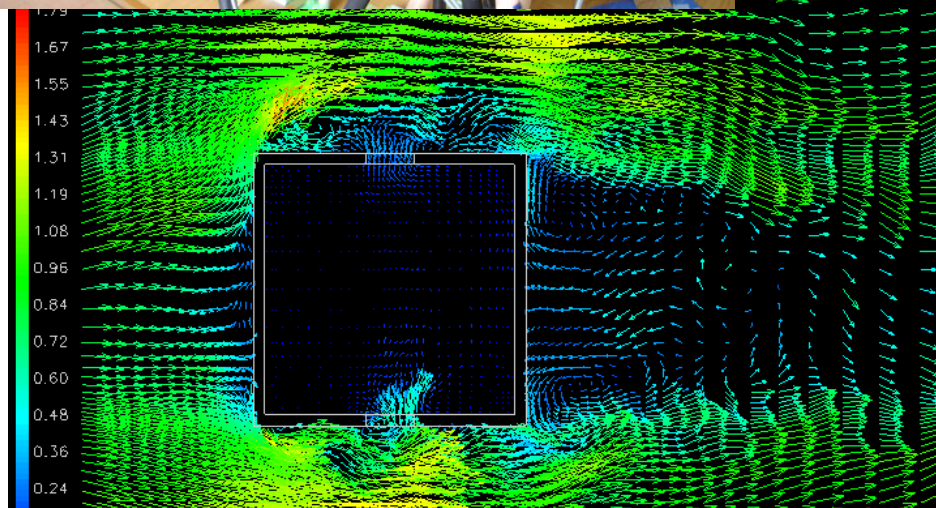
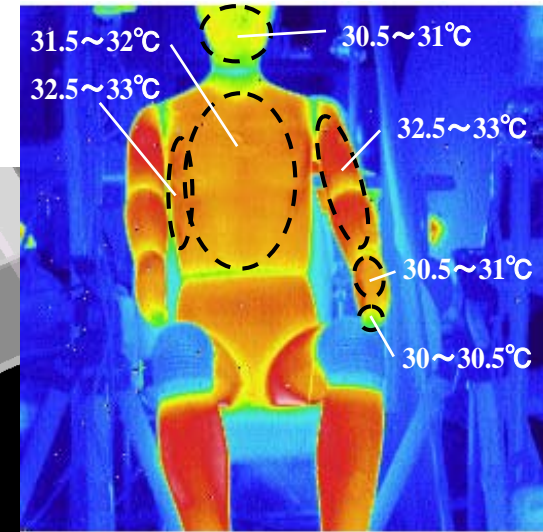
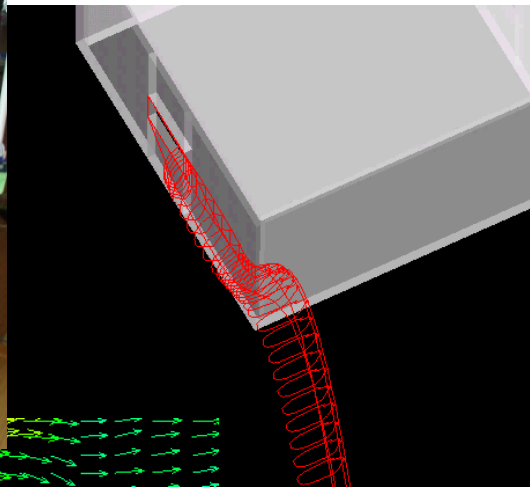
*Problems to
be solved*

Project 1 Wind Resistant Design

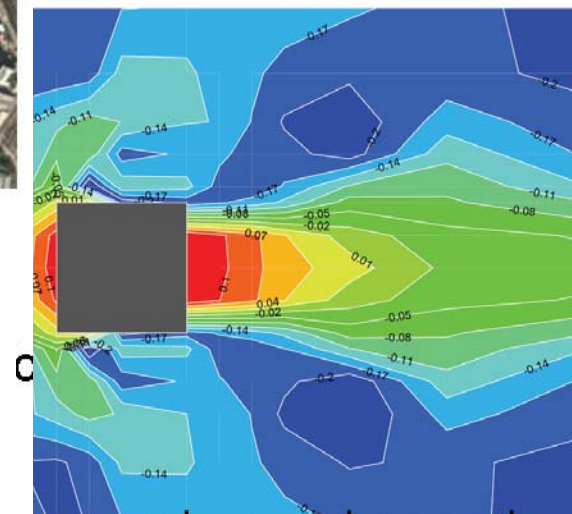
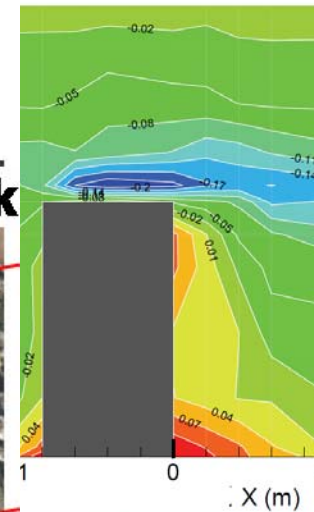
■ Wind Damage ...



Project 2 Design Methods of Natural / Cross Ventilation



Project 3 Wind Environment and Air Pollution



Research, Education and Practice

RESEARCH

- Research → **Impact on Education**
- Research → **Impact on Society**

EDUCATION					Wind Resistant Design	Natural/Cross Ventilation	Environment/Air-Pollution	
	Curriculum Development	(EVO)						
	International Advanced School							
	International Internship for PhD Students							
	APEC Short-term Fellowship							
	COE Open Seminar • Lifelong Education	(EVO)						
	Impact on Primary/Secondary Education	(EVO)						
	Impact for Secure & Safe Society	(EVO)						

New Frontier of Education and Research in Wind Engineering

Education Training

Inauguration of School of Architecture & Wind Engineering

School of *Architecture*

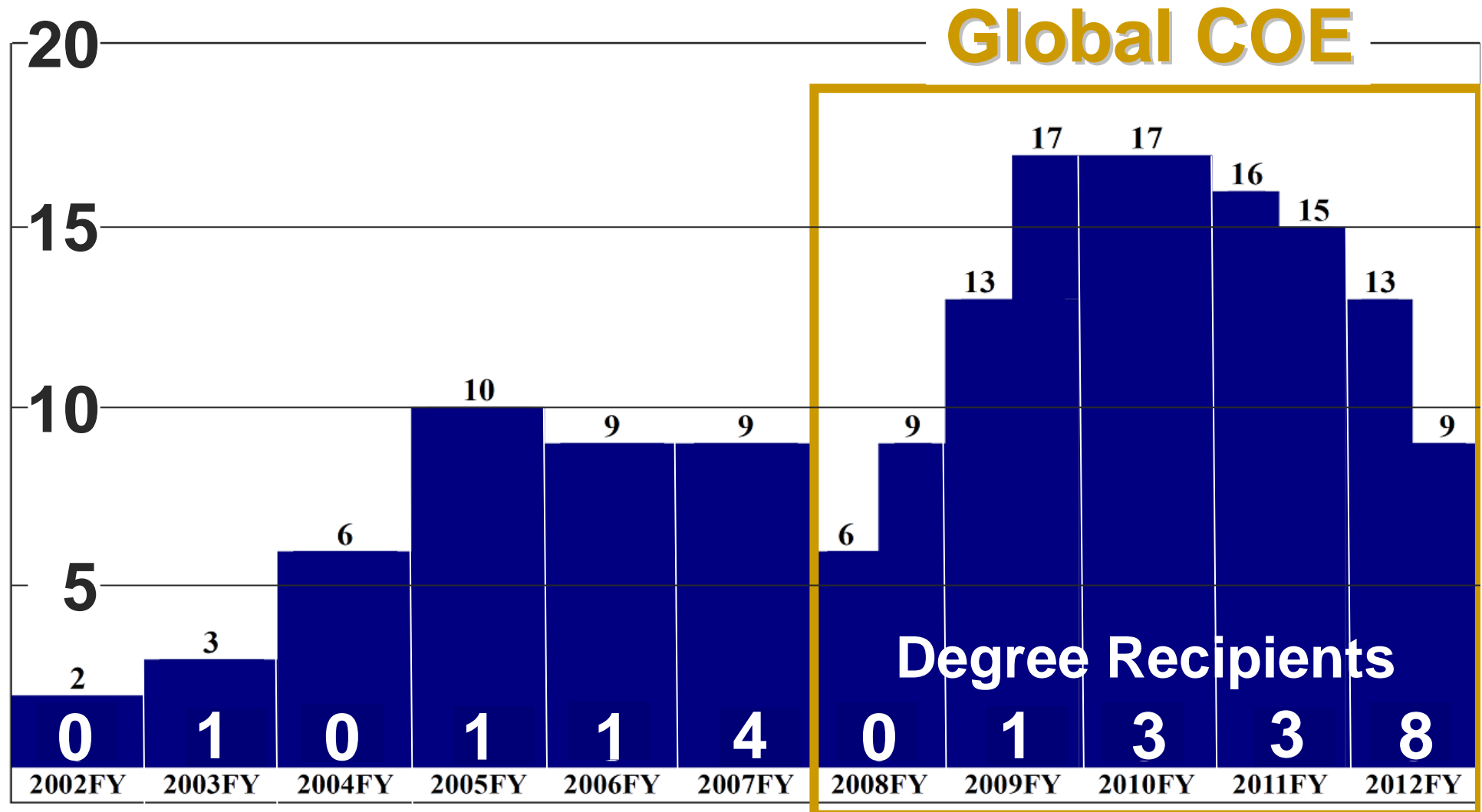


From 2010FY

School of *Architecture &
Wind Engineering*

Increase in Quota of PhD Students

Number of PhD Students in Wind Engineering Course



Education/Training Programs

2008FY-2012FY

■ Invitation of Excellent Young Talents

• Post Doctoral Fellowship	Total 18
• Research Assistant Fellowship	18
• Short-term Fellowship	23
• PhD Student International Internship	22

- Recruitment via Web Site, Newsletters (4/year), Bulletins (2/year)
- Recruitment via International Symposiums/ Workshops/Conferences
- Recruitment via global platforms such as **APEC Wind Engineering Network, VORTEX-Winds EVO**

Short-term Fellowship & PhD Students International Internship

2003FY-2012FY

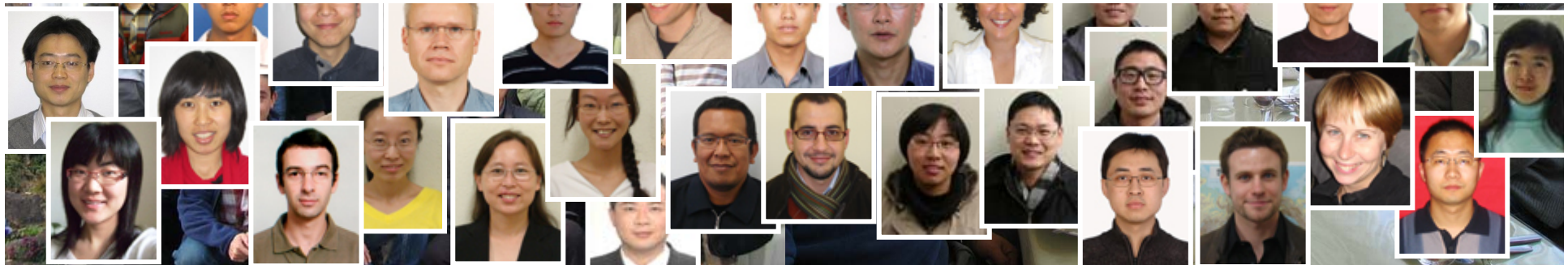
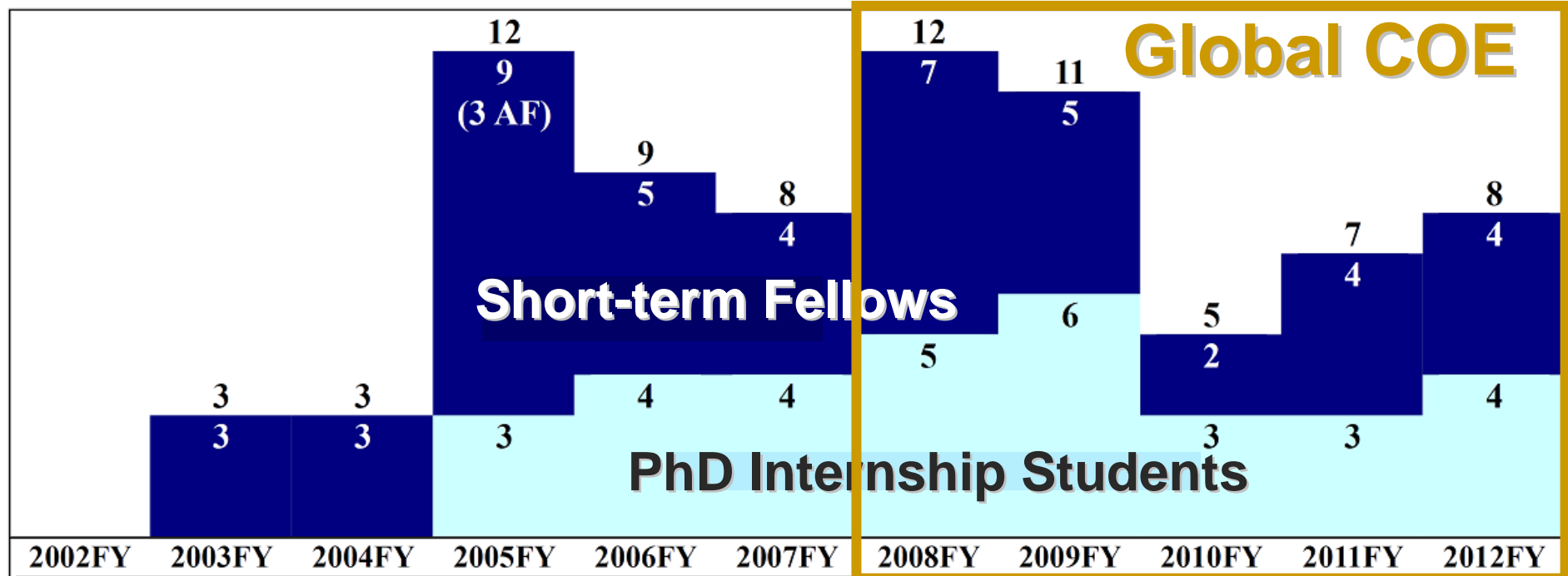
Short-term Fellowship (41)

72

PhD Student International Internship (31)

Short-term Fellowship & PhD Students International Internship

2003FY-2012FY



TPU COE Open Seminars 2003FY- 2012 FY

GCoe Program TPU
New Frontier of Education and Research in Wind Engineering

Global COE Open Seminar

風工学・教育研究のニューフロンティア
New Frontier of Education and Research in Wind Engineering

GCoe Program TPU
New Frontier of Education and Research in Wind Engineering

Global COE Open Seminar

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GCoe Program TPU
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Global COE Open Seminar

風工学・教育研究のニューフロンティア
New Frontier of Education and Research in Wind Engineering



119 Seminars

Prof. Bernd Leitner
(Meteorological Institute,
of Hamburg)

Prof. Ivan S. K. Au
(City University of Hong Kong)
Title: Bayesian ambient model
identification: from theory to practice

Global COE Open Seminar
風工学・教育研究のニューフロンティア
New Frontier of Education and Research in Wind Engineering

グローバル COE 特別オープンセミナー
New Frontier of Education and Research in Wind Engineering

日時: 2012年3月6日 10:00~
参加費: 無料
会場: ホテルサンルートプラザ新宿 1階 美
JR 新宿駅【南口】より徒歩3分
都営大江戸線新宿駅【A1: 新宿マイナ




High-Quality State-of-the-Art Education

23 Guest Professors

1. Chris Baker
2. Shuyang Cao
3. Yan Chen
4. Chii-Ming Cheng
5. Richard de Dear
6. Richard G.J. Flay
7. Yaojun Ge
8. Ming Gu
9. Per Heiselberg
10. Alan P Jeary
11. Michael Kasperski
12. Shinsuke Kato
13. Greg Kopp
14. Kenny C. S. Kwok
15. Chris Letchford
16. Martin Liddament
17. Akashi Mochida
18. Matthew Santamouris
19. Partha Sarkar
20. Michael Schatzmann
21. Ted Stathopoulos
22. Youlin Xu
23. Lingmi Zhang



International Advanced School on Wind Engineering

- IAS1, Atsugi, Japan, July 14-15, 2006
- IAS2, Tokyo, Japan, March 5 - 9, 2007
- IAS3, Shanghai, China, Nov. 21-23, 2007
- IAS4, Seoul, Korea, Dec. 6 - 8, 2007
- IAS5, Opole, Poland, March 23 - 25, 2009
- IAS6, Beijing, China, Aug. 31- Sep. 4, 2009
- IAS7, New Delhi, India, December 6-8, 2010
- IAS8, Hong Kong, China, November 14-18, 2011
- IAS9, Manila, Philippines, August 13 - 16, 2012

**Global
COE**



**The 8th International Advanced School
on Structural Wind Engineering**

IAS8-Course B

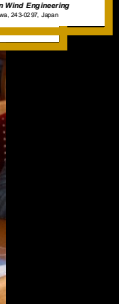
Co-host: Global COE Program at Tokyo Polytechnic University, Japan
Hong Kong Polytechnic University, Hong Kong
Hong Kong University of Science & Technology, Hong Kong

Date: November 14-18, 2011
Venue: Hong Kong University of Science & Technology

Lecturers: *Environmental Wind Engineering*
Chris Baker (University of Birmingham, United Kingdom)
Qingnan Chen (Purdue University, USA)
Shinsuke Kato (University of Tokyo, Japan)
Kenny C. S. Kwok (University of Western Australia, Australia)
Matthew Santamaria (University of Athens, Greece)
Michael Schatzmann (University of Hamburg, Germany)
Ryuchiro Yoshie (Tokyo Polytechnic University, Japan)

Contact: Department of Civil and Structural Engineering
Hong Kong Polytechnic University, Hong Kong
E-mail: cas@polyu.edu.hk (Prof. Youn Xu)

Global COE Program New Frontier of Education and Research in Wind Engineering
The Global COE Office, Tokyo Polytechnic University, 1583 Iwase, Atsugi, Kanagawa, 243-0292, Japan
E-mail: globalcoe@atd.tokai.ac.jp, Tel/Fax: +81-46-242-5658



Intensive Course for PhD Students by Guest Professors

2008FY-2012FY

■ Two credits for fifteen 90min-lectures

2008FY	7 Professors	35 Lectures
2009FY	8 Professors	40 Lectures
2010FY	7 Professors	35 Lectures
2011FY	7 Professors	35 Lectures
2012FY	5 Professors	25 Lectures

**Global
COE**



New Frontier of Education and Research in Wind Engineering

International Conferences

International Symposium on Wind Effects on Buildings and Urban Environment

- ISWE1: **Tokyo**, March 8 & 9, **2004**
- ISWE2: **Seoul**, September 15, **2005**
- ISWE3: **Tokyo**, March 4 & 5, **2008**
- ISWE4: **Tokyo**, March 4 – 6, **2009**
- ISWE5: **Tokyo**, March 7 & 8, **2011**
- ISWE6: **Tokyo**, March 6, **2013**

Global
COE



Global Platform for Disaster Risk Reduction

Second Session, Geneva, Switzerland

16-19 June 2009



Special Event
to Launch International Group for
Wind-Related Disaster Risk Reduction

*TPU Global COE, IAWWE, ADRC,
ICHARM, SEEDS, UN-HABITAT,
UN/ISDR, UNU, WMO*

IG-WRD RR



Special Event to Launch International Group **WR DRR**

16-19 June 2009

Co-organized by *TPU Global COE, IAWE,
UN/ISDR Secretariat, UNU, ADRC, SEEDS*



Saving of Lives and Improved Coastal Risk Management through Regional Cooperation in Ocean and Marine Related Early Warning Systems in Asia

Special Event

Global Platform for Disaster Risk Reduction
Third Session, UN/ISDR, Geneva, Switzerland
May 10, 2011



Global Platform
for Disaster Risk Reduction
Third Session, Geneva, Switzerland
8-13 May 2011

Proceedings

of the Third Session of the Global Platform
for Disaster Risk Reduction and World
Reconstruction Conference

Geneva, Switzerland
8-13 May 2011

Invest Today for a Safer Tomorrow
Increase Investment in Local Action

World
Reconstruction
Conference

In collaboration with the World Reconstruction Conference

International Concerted Actions for Wind-Related Disaster Risk Reduction

IG-WRRR

Special Session

OF FLOODS

FLOOD OF

REPORTS

FLOOD OF
MONEY

FLOOD OF
CONSTANTS

The
ICWE13

AMSTERDAM | The Netherlands 2011

13th International Conference on Wind Engineering

Amsterdam, Netherlands

July 11, 2011



*UN/ISDR, WMO, UNESCO,
UNESCAP, IFRC,
Munich Re, BDPC*

Margareta Wahlström

Special Representative of
The UN Secretary General
for Disaster Risk Reduction

Workshop on Regional Harmonization of Wind Loading and Wind Environmental Specifications in Asia-Pacific Economies

- APEC-WW1: **Atsugi, Japan**, November 19 & 20, **2004**
- APEC-WW2: **Hong Kong**, December 4 & 5, **2005**
- APEC-WW3: **New Delhi, India**, November 2 & 3, **2006**
- APEC-WW4: **Shanghai, China**, November 19 & 20, **2007**
- APEC-WW5: **Taipei, Taiwan**, November 12 - 14, **2009**
- APEC-WW6: **Gangneung, Korea**, October 21 - 23, **2010**
- APEC-WW7: **Hanoi, Vietnam**, November 12 - 13, **2012**

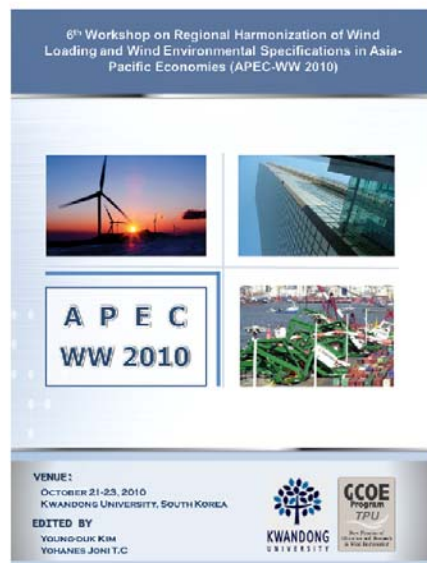


COUNTRY REPORTS

Edited by
Ajay Gairola
Achal Mittal

WORK EXAMPLES

Edited by
Ajay Gairola
Achal Mittal



APEC-WW & IG-WRDRR Joint Workshop Wind-Related Disaster Risk Reduction Activities in Asia-Pacific Region and Cooperative Actions

October 24, 2010, Incheon, Korea

Proceeding of

The 2010 APEC-WW & IG-WRDRR Joint Workshop
"Wind-Related Disaster Risk Reduction (WRDRR)
Activities in Asia-Pacific Region and Cooperative Actions"
October 24, 2010, Songdo Bridge Hotel, Incheon, Korea



EDITED BY

YOUNG-DUK KIM
YOHANES JONI T.C



4AMCDRR Pre-Conference Event

Climate Change and Wind-Related Disaster Risk Reduction Activities in Asia-Pacific Region

October 25, 2010, Incheon, Korea

The 4th ASIAN MINISTERIAL CONFERENCE ON DISASTER RISK REDUCTION
October 25-28, 2010, Incheon, Republic of Korea



4th AMCDRR
Disaster Risk Reduction through
Climate Change Adaptation
Oct. 25-28, 2010 Incheon, Korea

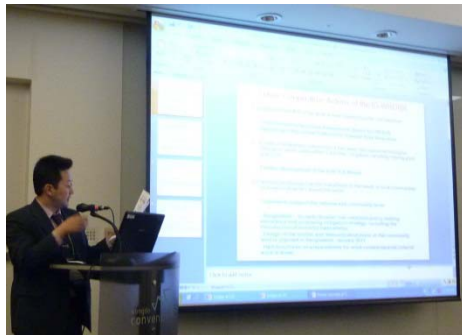
ISDR
International Strategy for
Disaster Reduction

IG-WRRR
International Association
for Wind Engineering

IG-WRRR

GCoe
Program
TPU
New Frontier of
Education and Research
in Wind Engineering

UDPC
SEEDS



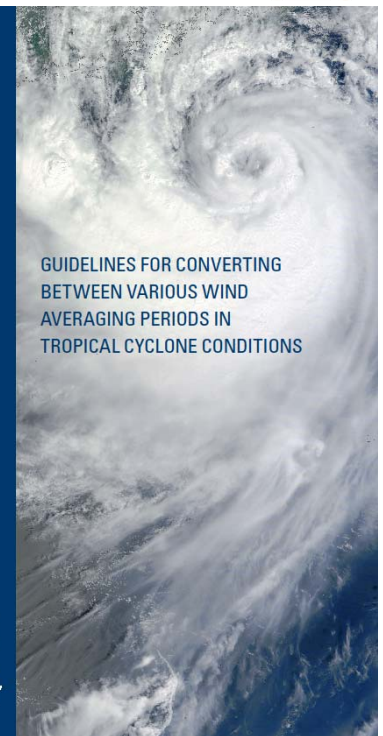


4th AMCDRR
Disaster Risk Reduction through
Climate Change Adaptation
Oct. 25-28, 2010 Incheon, Korea

115

Pre-Conference Event B
25 October, 2010 09:00-12:30
IGWRRR

Side Event C
26 October, 2010 12:30-14:00

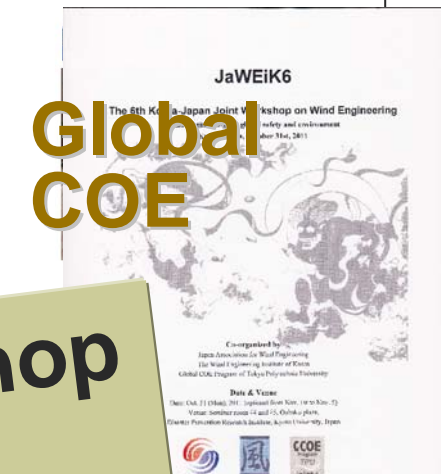
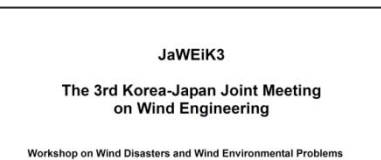


GUIDELINES FOR CONVERTING
BETWEEN VARIOUS WIND
AVERAGING PERIODS IN
TROPICAL CYCLONE CONDITIONS



Korea-Japan Joint Workshop on Wind Engineering (JaWEiK)

- JaWEiK1: **Seoul**, September 15, **2005**
- JaWEiK2: **Tokyo**, June 1, **2006**
- JaWEiK3: **Kwangdong**, May 11, **2007**
- JaWEiK4: **Cheju**, May 31, **2008**
- JaWEiK5: **Seoul**, September 6, **2010**
- JaWEiK6: **Kyoto**, October 31, **2011**
- CJK 7: **Pohang**, June 1, **2012**



China-Japan-Korea (CJK) Workshop
From 2012FY



International Workshop on Natural Ventilation (IWNV)

(co-organized by **NILIM**, **BRI** and **TUS**)

- IWNV 1: **Atsugi**, October 31, **2003**
- IWNV 2: **Tokyo**, December 1 and 2, **2005**
- IWNV 3: **Tokyo**, March 16, **2009**

**Global
COE**



Architectural Institute of Japan

International Workshop on Equivalent Static Wind Loads

NSFC-JST Cooperative Research Project

Global COE

1st IW-ESWL, Shanghai, China,

2nd IW-ESWL, Atsugi, Japan,

3rd IW-ESWL, Beijing, China,

4th IW-ESWL, Uji, Japan,

5th IW-ESWL, Pohang, Korea,

6th IW-ESWL, Miyakojima, Japan,

July 4 & 5, 2010

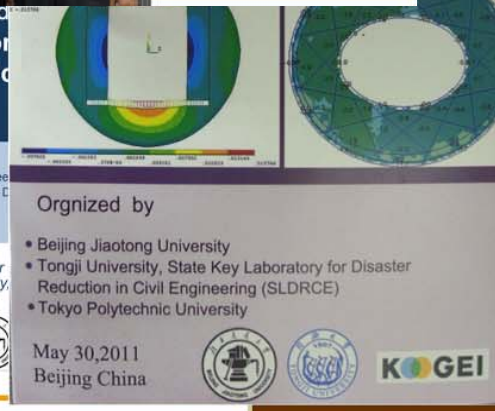
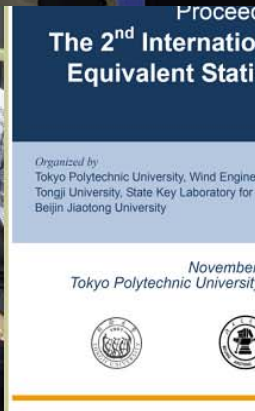
November 29, 2010

May 30 & 31, 2011

November 1 & 2, 2011

June 2 & 3, 2012

November 3 & 4, 2012



A Preparatory Mission to Bangladesh (17-21 Aug., 2009)



Dr. Muhammad Abdur Razzaque (Minister of Food and Disaster Management, Bangladesh)
Aug.18, 2009

- Bangladesh Disaster Preparedness Center (BDPC)
- Ministry of Food and Disaster Management
- Bangladesh Red Crescent Society (BRCS)
- Bangladesh Meteorological Department (BMD)
- Ministry of Defense
- SAARC Meteorological Research Centre (SMRC)
- UNDP
- JICA Bangladesh
- Grameen Bank
- Disaster Management Bureau (DMB)
- Swiss Agency for Development Cooperation (SDC)

Preparatory Visits to Tornado Affected Villages in Bangladesh



International Forum on Tornado Disaster Risk Reduction for Bangladesh

– To Cope with Neglected Severe Disasters –
13-14 December 2009, Dhaka, Bangladesh



Cooperative Activities for Disaster Risk Reduction

Follow-up Report April 2010

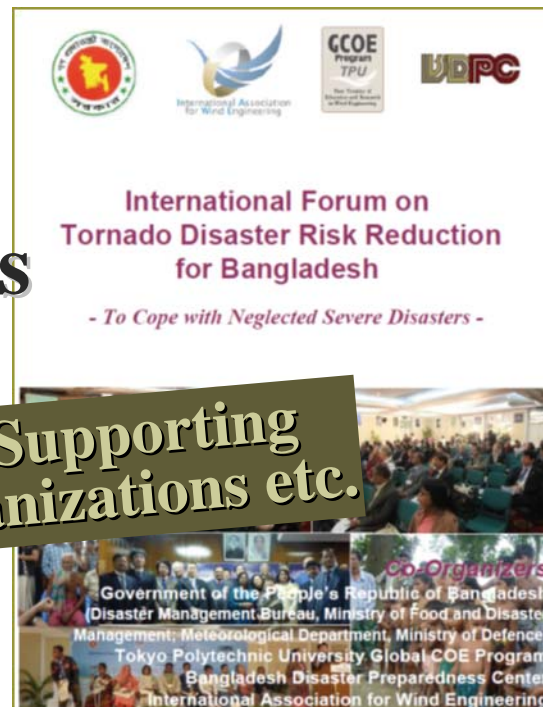
International Forum on Tornado Disaster Risk Reduction for Bangladesh

13-14 December 2009, Dhaka, Bangladesh

English

Bengali

- **Press Release**
- **Chair's Report**
- **Position Paper**
- **Recommendations**



**Bangladesh Government, Supporting
Countries, Supporting Organizations etc.**

Mini Safe Room (MSR) Project for Bangladesh

Co-operated with BDPC and SEEDS Asia

January 25, 2011: Visit to an Affected Village
January 26, 2011: Meeting on MSR (Dhaka)
January 8 - 15, 2012: MSR Project (Dhaka & Tangail)
January 13, 2013: MSR Project (Tangail)



Mini Safe Room (MSR) Project in Bangladesh (January 8 - 15, 2012)

Meeting at Rampur Primary & High School Rampur, January 10, 2012



Mini Safe Room (MSR) Project in Bangladesh (January 8 - 15, 2012)

Meeting with Village People Rampur, January 10 - 13, 2012



Mini Safe Room (MSR) Project in Bangladesh (January 13, 2013)

- Knowledge Dissemination and Education on Tornados and Risk Reduction in Bangladesh
 - Poster
 - Lectures at Schools/Villages
- Maintenance and Serviceability Check of MSRs



Tornado Disaster Risk Reduction Meeting at Balla Bazar Union and Balla High School

January 14, 2013, Tangail, Bangladesh



টর্নেডোতে ক্ষতি

টর্নেডো এবং করণীয়

টর্নেডোতে করণীয়

টর্নেডো বাড়িঘর, গাছপালা ও স্থাপনা ধ্বংস করতে পারে।

- যত দ্রুত সম্ভব মজবুত কোন ঘরে আশ্রয় নিতে হবে।
- ঘরের ভিতরে যিনি সেক্ষতি ক্রমে (ছোট নিরাপদ ক্রমে) আশ্রয় নিতে হবে।
- কোথাও আশ্রয় পাওয়া না গেলে মাথার উপর হাত রেখে কোন গর্ত বা নিচু স্থানে গুয়ে পড়তে হবে।

টর্নেডোতে সতর্ক থাকুন, প্রাণহানি ও ক্ষতি কমিয়ে আনুন।

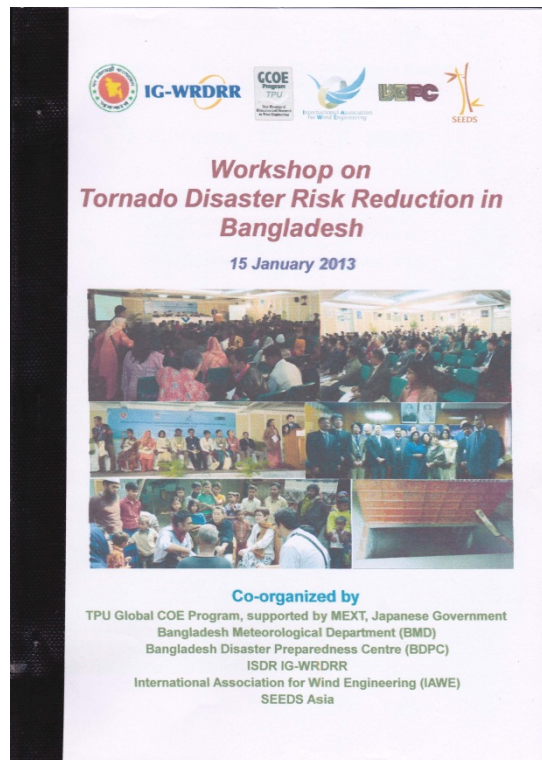
প্রচারে : **UDPC** বাংলাদেশ ডিজাস্টার প্রিপেডারনেস সেন্টার
ইন্টারন্যাশনাল এসোসিয়েশন ফর উইন্ড ইঞ্জিনিয়ারিং

সহযোগিতায় :

Workshop on Tornado Risk Reduction in Bangladesh

January 15, 2013

Bangladesh Meteorological Department,
Dhaka, Bangladesh



Bi-Lateral Workshops with Universities and Institutes

- Univ. of Nottingham, **Nottingham, UK** Apr. 25 - 26, **2005**
- Hong Kong Polytech. Univ., **Hong Kong**, Dec. 11, **2006**
- Tamkang Univ., **Taipei, Taiwan** Aug. 27, **2008**
- China Aerodynamic Research and Development Center **1, Atsugi, May 11, 2010**
- **2, Mianyang, Aug. 16 - 18, 2010**
- **3, Mianyang, Dec. 16, 2011**
- Chang'An Univ., **Atsugi, June 22, 2011**
- DPRI, Kyoto Univ., **Uji, Nov. 3 - 5, 2011**

Global COE



International Symposiums/ Workshops

The 21st Century COE (2003FY-2007FY)

International
Advanced
School:

4

Symposiums/
Workshops: 18

Global COE (2008FY-2012FY)

International
Advanced
School:

5

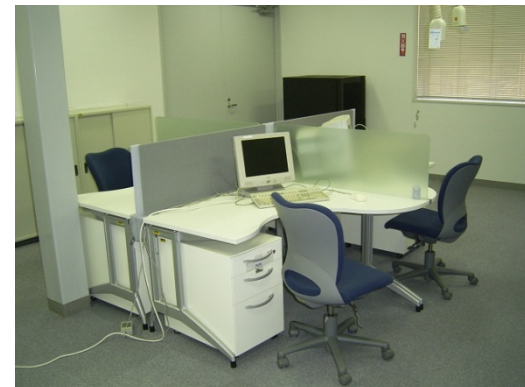
Symposiums/
Workshops: 33

New Frontier of Education and Research in Wind Engineering

Dissemination

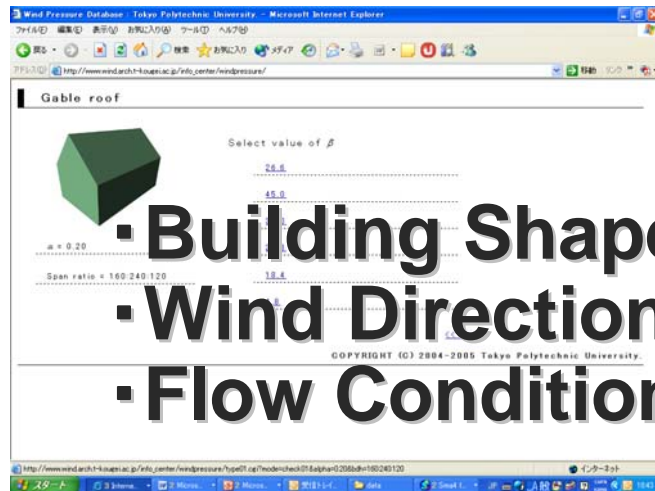
Dissemination from Wind Engineering Information Center

- **Disclosure of Databases, Educational Contents**
 - COE Open Seminar
 - Wind Engineering IT Contents (Lecture Notes, ppts)
 - Aerodynamic Database (Wind Pressures, etc.)
 - Wind Damage Database (Reports, Statistics)
 - Wind Speed Data in Asian Region
 - Wind-induced Response Monitoring Data, etc.
- **Wind Effect News (in Japanese): Quarterly**
- **Wind Effect *Bulletin* (in English): Biannual**

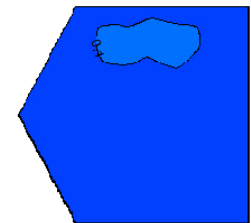
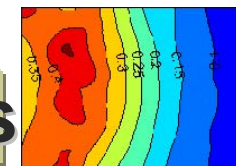
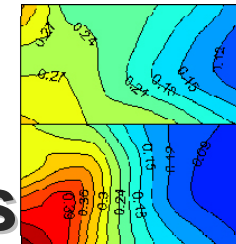
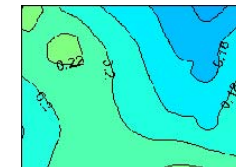
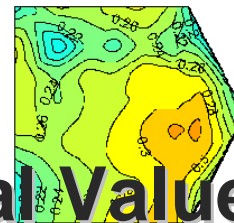
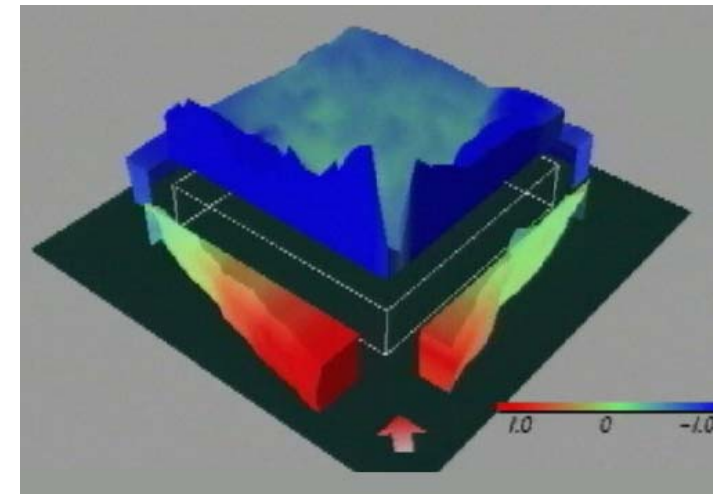
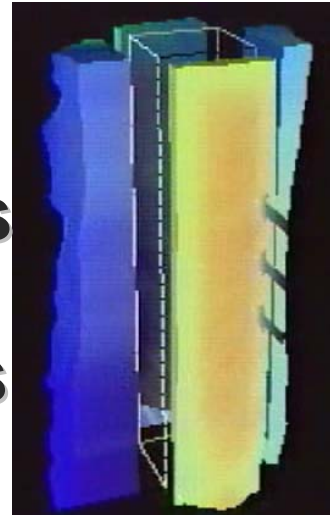


Web-base Disclosure from Wind Engineering Information Center

Aerodynamic Database



- Building Shapes
- Wind Directions
- Flow Conditions



- Statistical Values
- Raw Data
- Universal ESWLs

Web-base Disclosure from Wind Engineering Information Center

Aerodynamic Database

Isolated Buildings

Low-rise:	239 Buildings
Medium & High-rise:	22 Buildings

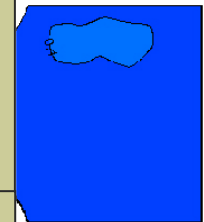
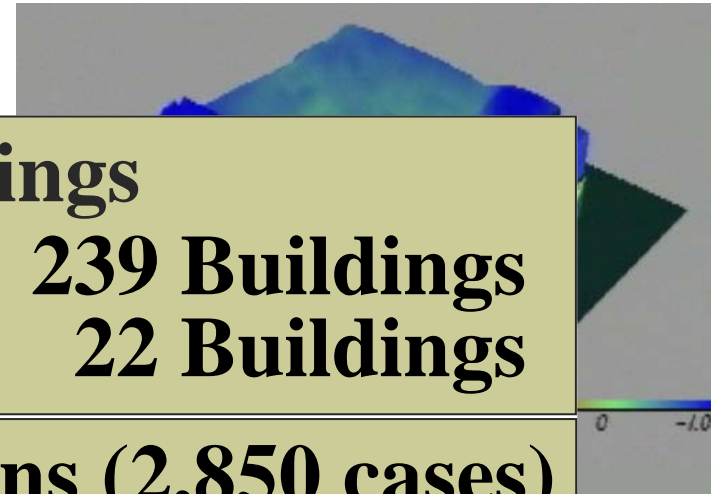
Including wind directions (2,850 cases)

Interference Effects

Low-rise:	112 Combinations
High-rise:	120 Combinations

Including wind directions (10,749 cases)

- Universal ESWL



Web-base Disclosure from Wind Engineering Information Center

(Streaming)

Educational IT Contents

• COE Seminars
• Intensive Courses

The screenshot displays two instances of the Microsoft Internet Explorer browser. The left browser window shows a video lecture titled 'Some new vibration-based damage detection methods' by Prof. Zhongdong Duan. The video player shows a man speaking, and the title bar indicates 'StreamAuthor 2.6 - Microsoft Internet Explorer'. The right browser window shows a video lecture titled 'The 33th COE Open Seminar' by Reinhold (Institute of Business Engineering Research Center, Tokyo). The video player shows a man in a suit speaking, and the title bar also indicates 'StreamAuthor 2.6 - Microsoft Internet Explorer'. Below the video lectures, there is a power-point presentation titled 'Hurricane Performance Chain' from the 'Institute for Business & Home Safety'. The presentation shows a flowchart with four ovals: 'Loads & Effects', 'Design', 'Construction & Installation', and 'Maintenance', all pointing to 'Building Codes and Enforcement'. The title bar of the power-point window indicates 'Microsoft PowerPoint'.

Lecture Video (Streaming)

Power-point

Publication from Wind Engineering Information Center

2008FY- 2012FY

Wind Effects *News* (in Japanese)



No.1 Dec 2003

No.30 Aug. 2012

Wind Effects *Bulletins* (in English)

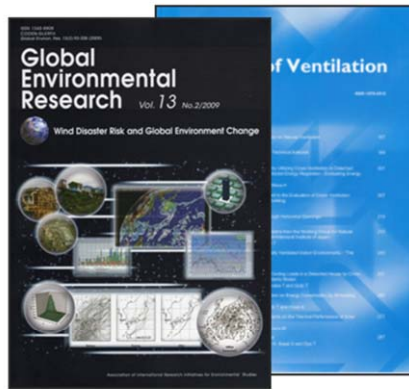


No.1 Feb 2004

No.19 Mar. 2013

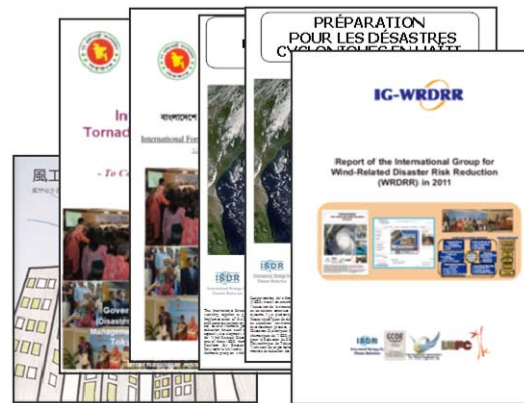
Publication from Wind Engineering Information Center *cont'd*

2008FY- 2012FY



Refereed Journals (2)

Proceedings (20)



Text Books

Brochures (6)

Annual Reports (5)

New Frontier of Education and Research in Wind Engineering

Engineering Virtual Organization

VORTEX-Winds Member Organizations



VORTEX-Winds

Potential Contributions by Members

	Databases/e-Design	Wind Tunnel Facility	Full-Scale Monitoring	Real-Time Met.	CFD Platform	Large-Scale Wind Simulator	Gust, Tornado Sim.	Edu.
U-Notre Dame	○	○	○		○		○	○
Tokyo Poly-U	○	○	○	○	○		○	○
U-Western Ontario	○	○	○		○	○		○
U-Genova	○	○	○	○				○
Tamkang-U	○	○	○		○			○
Tongji-U	○	○	○		○			○
U-Florida			○	○		○		○
Iowa State-U		○			○		○	○
Texas Tech-U		○	○	○				○
Colorado State-U		○			○			○
Johns Hopkins-U		○	○					○
Hong Kong-UST		○	○					○
IIT Roorkee	○		○					○
NIST	○				○			

VORTEX-Winds

Potential Contributions by Members

	Databases/e-Design	Wind Tunnel Facility	Full-Scale Monitoring	Real-Time	Modeling	Simulation	Validation	U.
U-Notre Dame	○							○
Tokyo Poly-U								○
U-Wy								○
								○
								○
								○
U-Florida								○
Iowa State-U		○						○
Texas Tech-U		○	○	○				○
Colorado State-U		○			○			○
Johns Hopkins-U		○	○					○
Hong Kong-UST		○	○					○
IIT Roorkee	○		○					○
NIST	○				○			

- Enable new collaborative initiative using cyber infrastructure

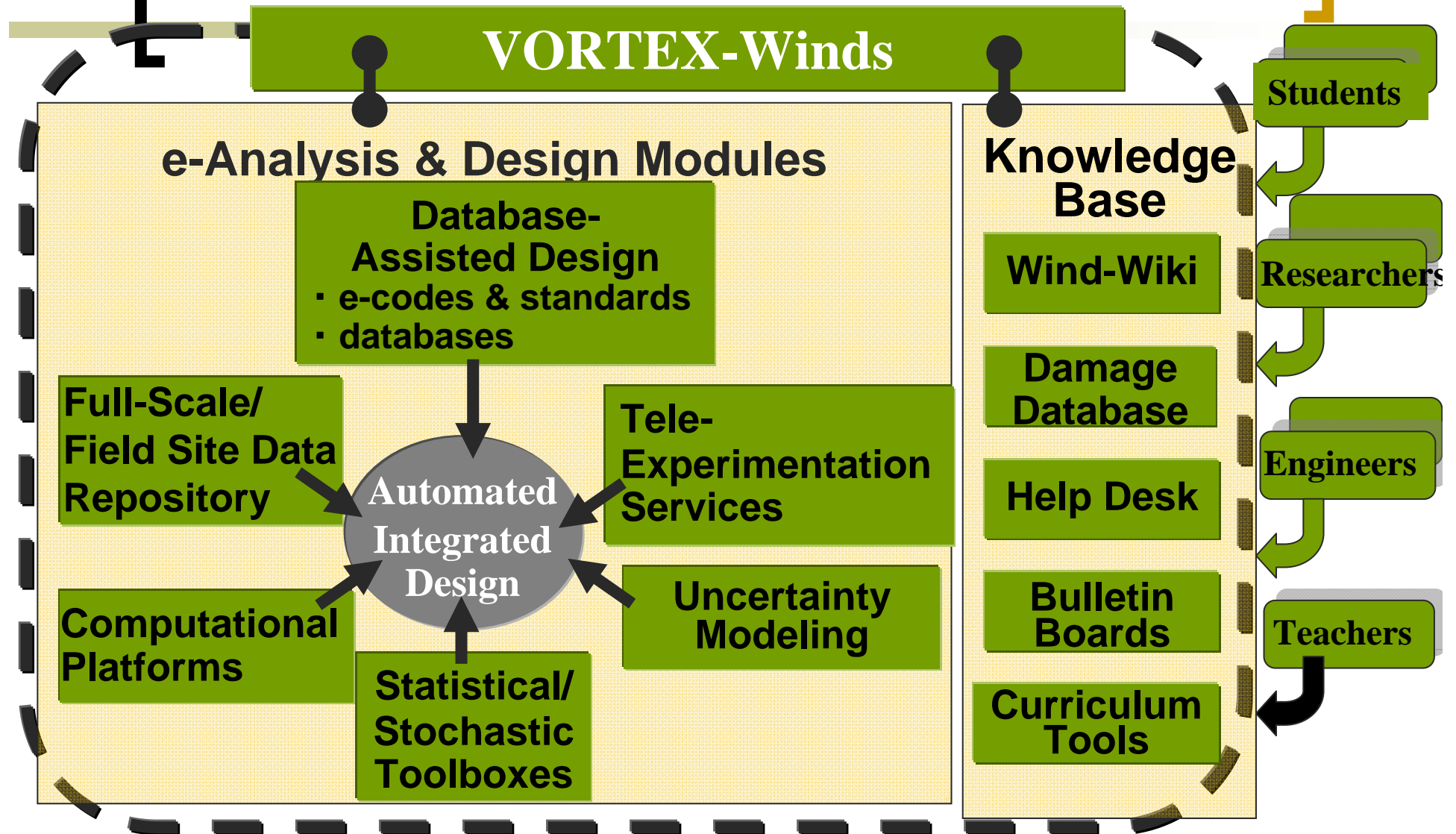
VORTEX-Winds

Potential Contributions by Members

	Databases/e-Design	Wind Tunnel Facility	Full-Scale Monitoring	Real-Time	...
U-Notre Dame	○				
Tokyo Poly-U					
U-W					
U-Florida					
U-Texas					
U-Iowa					
U-Michigan					
U-Minnesota					
U-North Carolina					
U-Oregon					
U-Rhode Island					
U-Tennessee					
U-Virginia					
U-Wisconsin					
U-Wyoming					

- Enable new collaborative initiative using cyber infrastructure
- Real-time sharing and complementing of individually owned intellectual and physical resources

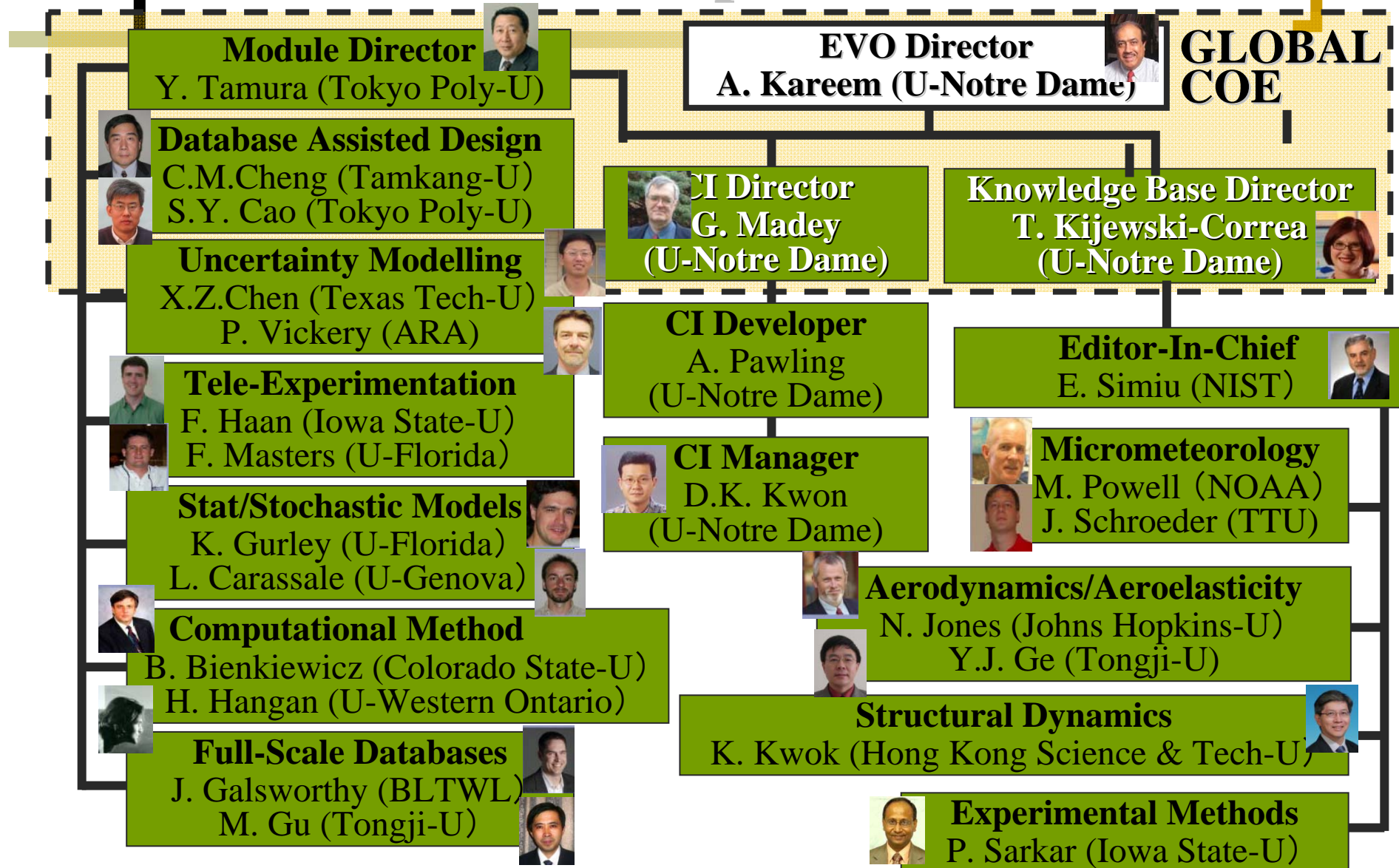
Capabilities of VORTEX-Winds



(Kareem & Kijewski-Correa, 2008)

VORTEX-Winds

Leadership Structure



VORTEX-Winds Website

Winds e-Module ▾

al CI Design

1 Goals

nd Merit

S

VORTEX-Winds.org A VIRTUAL ORGANIZATION TO REDUCE THE TOLL OF EXTREME WINDS ON SOCIETY

Home About ▾ e-Module ▾ Knowledge Base ▾ Bulletin Board ▾ Wind-Wiki

Damage Database

User Login

USERNAME: *

PASSWORD: *

Log in

Account Services

Create Account

My Account

Damage Gallery

Previous Next

"Failure is success if we learn from it." -Malcom Forbes

VORTEX-Winds.org A VIRTUAL ORGANIZATION TO REDUCE THE TOLL OF EXTREME WINDS ON SOCIETY

Home VORTEX-Winds ▾ e-Module ▾ Knowledge Base ▾

User Login

USERNAME: *

PASSWORD: *

Log in

Login Instructions

Login Helper

New Account

Create New Account

Search

Welcome to Vortex-Winds

In order to mitigate escalation and disruption of local economic design paradigm is production structures through the t... particularly benefit from t... experimental and empiric... Virtual Organization for Re... Society (VORTEX-Winds), functionality, will functi... geographically dispersed publicly accessible knowled

News Center

Consultants continue

Ike

Wind-wiki

page discussion view source history

Main Page

Pages in the Main namespace are editable by only the Editor-in-Chief. Additionally, the Editor-in-Chief may edit any page edit the talk pages associated with any namespace.

Contents [hide]

1 Subject Areas

1.1 Micrometeorology

1.2 Aerodynamics and Aeroelasticity

1.3 Structural Dynamics

1.4 Experimental Methods

Subject Areas

Micrometeorology

navigation

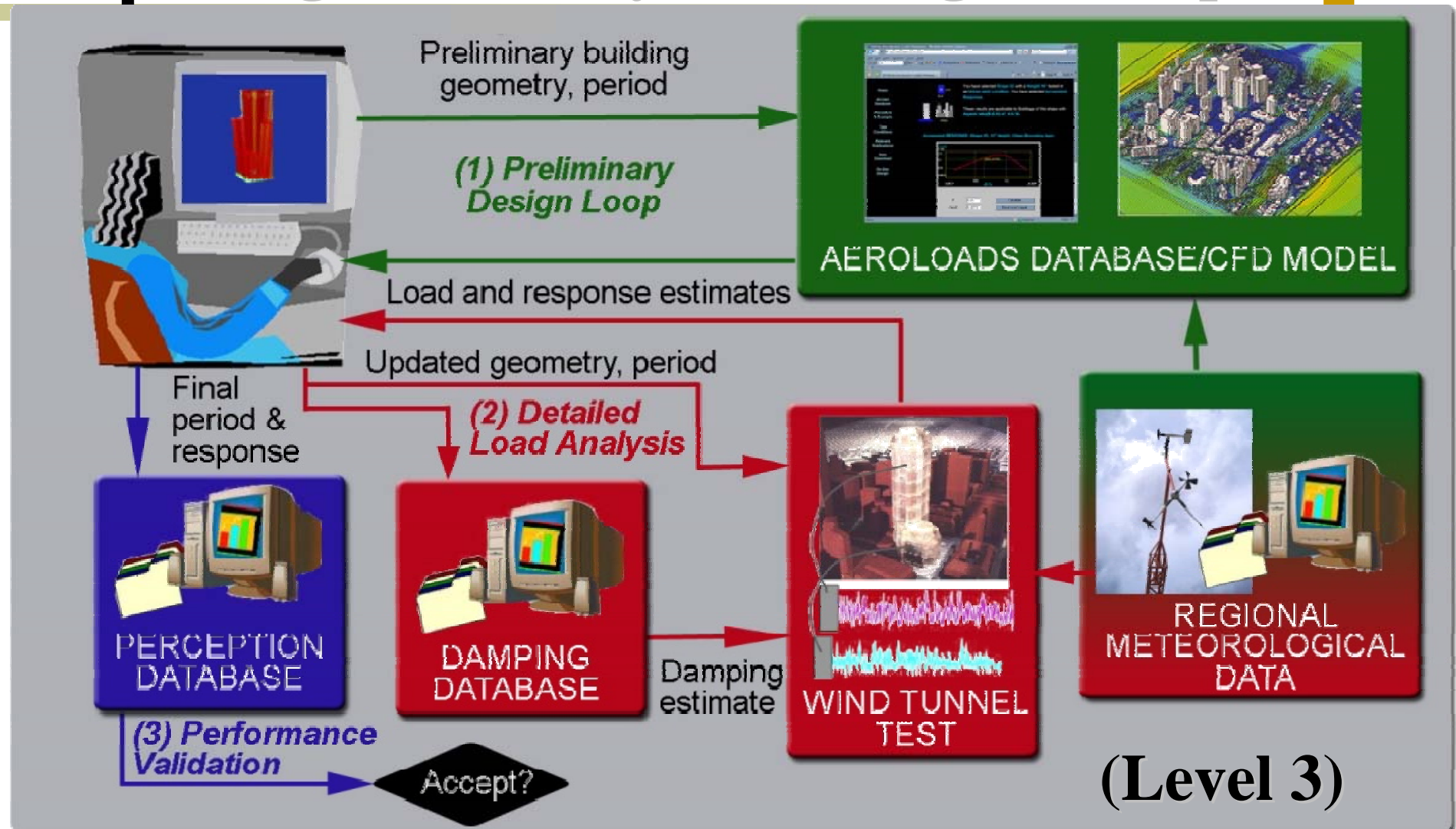
- VORTEX-Winds Home
- Wind-wiki Home
- Micrometeorology
- Aerodynamics and Aeroelasticity
- Structural Dynamics
- Experimental Methods
- Help

search

Go Search

VORTEX-Winds Functionality

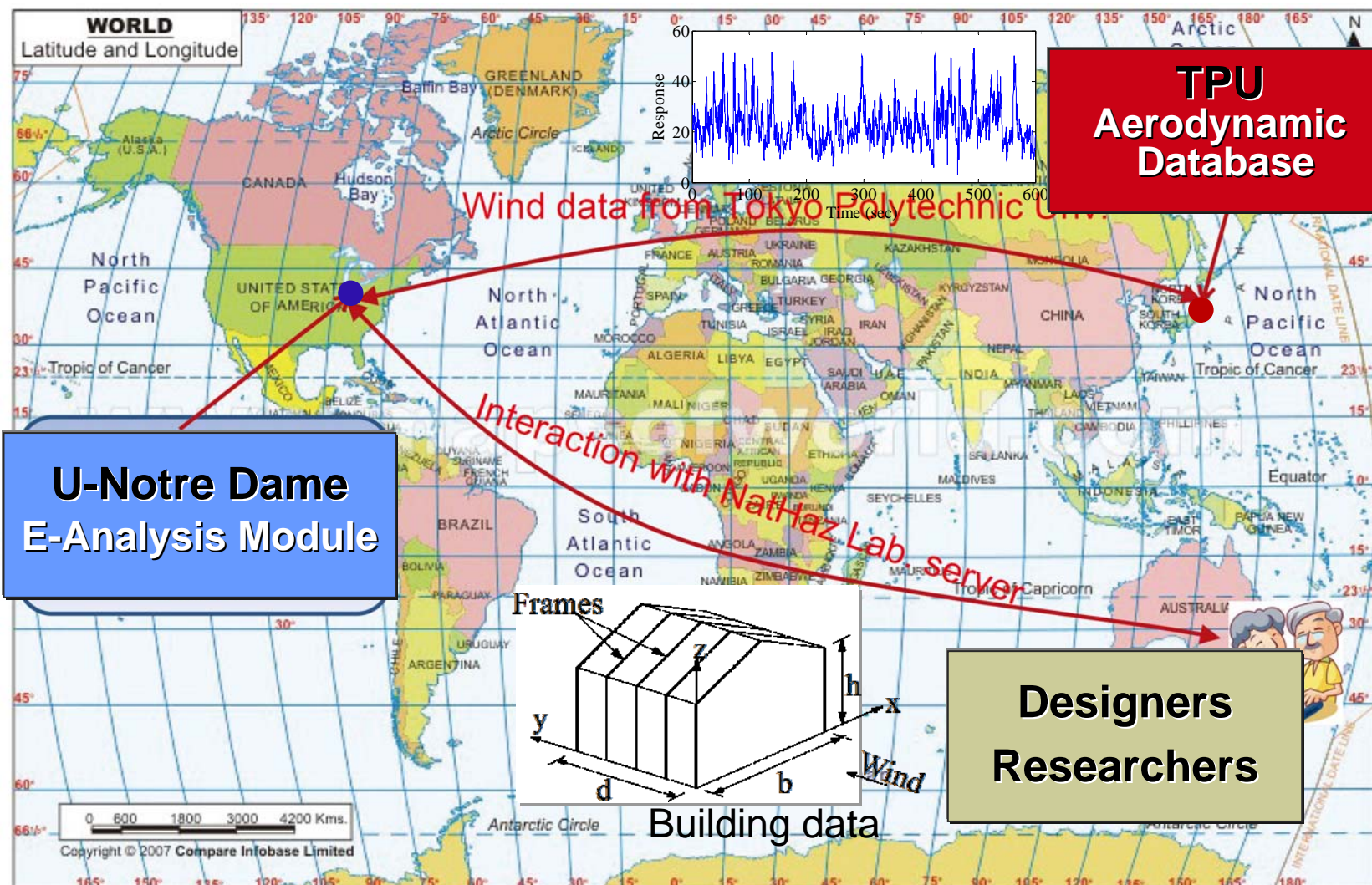
Integrated Analysis & Design Concept



(Kareem & Kijewski-Correa, 2008)

VORTEX-Winds Functionality

Integrated Wind Resistant Design



New Frontier of Education and Research in Wind Engineering

Future Prospects

Future Prospects (1)

- **High-quality State-of-the-Art Education**
- **Center-to-Center Based Collaborations**
- **World Leading Roles**
 - **APEC-WW (Regional Harmonization)**
 - **International Advanced School**
 - **IG-WRRDRR (Disaster Risk Reduction)**
- **VORTEX-Winds (Univ. of Notre Dame)**
- **Aerodynamic Database (ASCE-7)**
- **etc.**

Future Prospects (2)

- **Application for MEXT Joint Usage/Research Center Program**
- **Application for MEXT Private Universities Building-up Foundations of Strategic Research Program**
- ***Challenge to New Paradigm of Experiments***
Full-scale Facilities
 - Jules Verne Climate Wind Tunnel (CSTB, France)**
 - Full-scale Test Facility (IBHS, USA)**
 - WindEEE Dome, Three Little Piglets (UWO, Canada)**

Acknowledgements

- **Financial Support by Ministry of Education, Culture, Sports, Science and Technology - Japan (MEXT)**
 - **Academic Frontier** (2000FY - 2007FY)
 - **The 21st Century COE** (2003FY - 2007FY)
 - **The Global COE** (2008FY - 2012FY)

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■ **The late Prof. Ken'ichi Honda**
Former President of TPU



■ **Prof. Nobuyuki Kobayashi**
Former President of TPU



Thank you!



A. Goliger (CSIR)