



The 21st Century COE Program
Wind Effects on Buildings and Urban Environment

TOKYO POLYTECHNIC UNIVERSITY

Wind Engineering Research Center

1583 Iiyama, Atsugi, Kanagawa, Japan 243-0297

Phone & Facsimile: +81 (0)46 242 9540

COE International Advanced School on “Computational Wind Engineering”

July 14 – 15, 2006

2nd floor, Atsugi Royal Park Hotel, Atsugi, Kanagawa

Lecturer: Prof. *Robert N. Meroney* (*Colorado State University*)
Prof. *Siva Parameswaran* (*Texas Tech University*)

July 14

10:00-13:00 Lecturer: Prof. Siva Parameswaran

Lecture 1: Computational Fluid Dynamics

Lecture 2: Conservation Laws of Fluid Motion

Lecture 3: Computational Techniques

Lecture 4: The Finite Difference Method: Unsteady Diffusion Equation in 1D

14:00-17:00 Lecturer: Prof. Robert N. Meroney

Lecture 5: The Realities of Applied CFD Modeling

Lecture 6: Special concerns for modeling atmospheric flows

Lecture 7: CFD Modeling of Cladding Loads, Wind Forces and HVAC Loads

Lecture 8: CFD Modeling of Atmospheric Transport and Dispersion

July 15

10:00-13:00 Lecturer: Prof. Siva Parameswaran

Lecture 9: The Finite-Volume Method: Steady Convection-Diffusion Equation

Lecture 10: Convection-Diffusion Equation in 2D

Lecture 11: Numerical Solution of Navier-Stokes Equations

Lecture 12: Turbulence Models for Computational Fluid Dynamics

14:00-17:00 Lecturer: Prof. Robert N. Meroney

Lecture 13: CFD modeling of Pedestrian Comfort Winds

Lecture 14: CFD Modeling of Ventilation, Smoke and Fire Within Buildings

Lecture 15: CFD Modeling of Smoke and Fire in Forest and Urban Canopies