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Titolo	Advanced Environmental Wind Engineering / / edited by Yukio Tamura, Ryuichiro Yoshie
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ISBN	4-431-55912-4
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (200 p.)
Disciplina	550
Soggetti	Environmental sciences Civil engineering Fluids Environmental Science and Engineering Civil Engineering Fluid- and Aerodynamics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Design procedures for natural ventilation -- Theoretical models of envelope flow - steady and unsteady -- Ventilation Flow Structure and High-precision Ventilation Network Model -- Passive Cooling of Buildings-Present and Future Needs - Recent Progress on Passive Cooling Convective Technologies -- Thermal Comfort Inside and Outside Buildings -- Pedestrian wind environment around tall buildings -- Wind-induced dispersion of pollutants in the urban environment -- Trends in the field of quality assurance of urban flow and dispersion models -- Wind Tunnel Experiment and Large Eddy Simulation of Pollutant/Thermal Dispersion in Non-Isothermal Turbulent Boundary Layer.
Sommario/riassunto	This book is highly suitable for advanced courses as it introduces state-of-the-art information and the latest research results on diverse problems in the environmental wind engineering field. The topics include indoor natural ventilation, pedestrian wind environment, pollutant dispersion, urban heat island phenomena, urban ventilation, indoor/outdoor thermal comfort, and experimental/numerical techniques to analyze those issues. Winds have a great influence on the

outdoor environment, especially in urban areas. Problems that they cause can be attributed to either strong wind or weak wind issues. Strong winds around high-rise buildings can bring about unpleasant, and in some cases dangerous, situations for people in the outdoor environment. On the other hand, weak wind conditions can also cause problems such as air pollution and heat island phenomena in urban areas. Winds enhance urban ventilation and reduce those problems. They also enhance natural ventilation in buildings, which can reduce the energy consumption of mechanical ventilation fans and air conditioners for cooling. Moderate winds improve human thermal comfort in both indoor and outdoor environments in summer. Environmental wind engineering associated with wind tunnel experiments and numerical analysis can contribute to solutions to these issues.