Special Issue

Advances in Computational Wind Engineering and Wind Energy (2nd Edition)

Message from the Guest Editors

As the global demand for sustainable energy solutions continues to grow, understanding and leveraging wind flow dynamics have become pivotal in diverse applications. Advances in computational methods, high-performance computing, and data analytics have revolutionized the study of wind flow dynamics, enabling deeper insights into atmospheric boundary-layer flows and their applications in wind energy and sustainable urban design.

This Special Issue of Atmosphere aims to bring together cutting-edge research and innovative methodologies in computational wind engineering and its applications to wind energy systems. We welcome contributions that connect theoretical insights with practical applications, utilizing numerical simulations, data-driven models, and hybrid experimental–computational methods. This Special Issue encourages interdisciplinary research spanning meteorology, aerodynamics, structural engineering, environmental sciences, climatology, and applied mathematics, with a focus on addressing challenges in renewable energy, urban environmental quality, and sustainable living.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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