Special Issue

Indoor Environment: Ventilation and Thermal Comfort

Message from the Guest Editor

Recent research shows that indoor environmental quality directly affects health, cognitive performance, and productivity, with ventilation and thermal comfort among the most critical factors. The COVID-19 pandemic revealed limitations of existing ventilation standards for airborne infection control. At the same time, increasing cooling demand and overheating risks linked to climate extremes point to the need for adaptable, low-carbon comfort strategies. These developments show that the design and control of indoor environments are central to both building science and public health. This Special Issue seeks contributions that address these challenges through human-centred design approaches that prioritise occupant health, comfort, and perception. It also emphasises integrated solutions, where air quality, infection risk, energy performance, and comfort are considered together. We welcome research on both adaptive design, enabling buildings to respond to changing climates and occupancy patterns, and proactive control, where predictive models or digital twins can be used to anticipate the need to optimise airflow, temperature, and energy in real time.

Guest Editor

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Deadline for manuscript submissions

31 May 2026

Atmosphere

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.9

mdpi.com/si/256282

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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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