

Special Issue

Heat Transfer and Particle Flow in Buildings

Message from the Guest Editor

This Special Issue targets the physics and control of heat and particle dynamics across scales, from pore-level fabrics and room-scale flows to multi-zone buildings and urban canyons. We welcome contributions that advance understanding of (i) buoyancy- and mechanically driven airflow; (ii) HVAC/filtration performance and trade-offs between ventilation, energy, and exposure; (iii) particle microphysics (nucleation, coagulation, hygroscopic growth, evaporation) coupled with deposition on surfaces and resuspension; and (iv) radiative heat transfer and solar gains under dynamic outdoor conditions (e.g., smoke, dust). Studies linking indoor–outdoor exchange during extreme events, and quantifying health-relevant metrics (dose, infection risk, exposure inequality), are especially encouraged.

Guest Editor

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Deadline for manuscript submissions

31 May 2026



Atmosphere

an Open Access Journal
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Impact Factor 2.3
CiteScore 4.9



mdpi.com/si/260604

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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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