Special Issue

Recent Advances in Regional Chemical Transport Modelling for Air Quality

Message from the Guest Editor

This Special Issue will focus on recent advances in regional-scale atmospheric dispersion modelling for air quality applications, with emphasis on the development, evaluation, and application of state-of-the-art modelling systems. We welcome contributions based on Eulerian chemical transport models (e.g., CMAQ, CAMx), coupled meteorology–chemistry frameworks (e.g., WRF–Chem), and Lagrangian approaches, including hybrid and multi-scale modelling strategies. Studies addressing model configuration, parameterization schemes, emission processing (e.g., SMOKE), data assimilation, and high-resolution simulations are particularly encouraged. The Special Issue also invites contributions exploring machine learning and artificial intelligence methods integrated with physical models. Model evaluation, uncertainty quantification, and intercomparison studies using observational datasets from monitoring networks and remote sensing are within scope. Applications related to regional air quality assessment, emission control scenarios, and policy-relevant analyses are also welcome, provided that they demonstrate methodological innovation and robustness.

Guest Editor

Dr. Neyval Reis, Jr.
Department of Environmental Engineering, Federal University of Espirito Santo (UFES), Vitória 29075-910, Brazil

Deadline for manuscript submissions

31 October 2026

Atmosphere

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.9

mdpi.com/si/278640

Atmosphere
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
atmosphere@mdpi.com

mdpi.com/journal/atmosphere

Atmosphere

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.9

mdpi.com/journal/atmosphere

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

Dr. Daniele Contini
Institute of Atmospheric Sciences and Climate (ISAC), National Research Council (CNR), Str. Prv. Lecce-Monteroni km 1.2, 73100 Lecce, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, GEOBASE, GeoRef, Inspec, CAPlus / SciFinder, Astrophysics Data System, and other databases.

Journal Rank:

CiteScore - Q2 (Environmental Science (miscellaneous))

MDPI