

Special Issue

Greenhouse Gas Emission: Sources, Monitoring and Control

Message from the Guest Editors

The atmospheric greenhouse gas (GHG) burden surges. Emergency actions are required to bring GHG back to a climate-neutral pathway. In recent years, substantial advances have been made toward greenhouse gas monitoring. Particularly, very high spatial, temporal or spectral resolution measurements can fill important observational gaps in the identification and quantification of greenhouse gas emissions.

Regarding anthropogenic sources, such as power plants, coal mines, landfills and other fossil fuel industries, emission reduction measures are facilitated by technical advances at an ever-increasing speed. By comparison, efforts to reduce emissions from biogenic sources, such as wetlands, have received less attention but are becoming more feasible. It should be noted that emerging advances generally fail in sound uncertainty assessments and large-scope applications, which should, thus, be verified in abundant real cases.

Moreover, there is no single magic bullet, but promoting a wide array of monitoring, measures and policies for emission reductions could significantly mitigate the global greenhouse gas burden in a cost-effective way and thereby, approach the climate-neutral aim.

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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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