Special Issue

Exploring the Earth's Ionosphere with a Dynamical Systems Approach

Message from the Guest Editors

Modelling the Earth's ionosphere as a whole, or regions of it, is a well-established branch of applied physics in which space physics and geophysics intersect. In this field, many lines of research co-exist; for example, empiric models co-exist with first principle models, and multi-instrument inversion techniques may aid in the assimilation of real data in theoretical modelling. Moreover, the growing use of machine learning and artificial intelligence techniques in this field offers unprecedented opportunities to exploit the large datasets associated with aeronomy and near-Earth space physics in order to create new empirical and hybrid models. This Special Issue of *Atmosphere* aims to collect research that represents the Earth's ionosphere as a dynamical system that can be delineated using first principles, as deduced from a collection of empirical data and observations, or may be designed specifically for a particular phenomenon or set of phenomena.

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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