Special Issue

The Role of Solar Wind-Magnetosphere Coupling in the Ionospheric Dynamics

Message from the Guest Editors

The understanding of the physical mechanisms regulating solar wind–magnetosphere–ionosphere coupling motivates the necessity for original contributions to the current knowledge in this topic. In particular, numerical and analytical models as well as case studies and statistical investigations under different solar conditions are encouraged to advance process analysis and basic coupling theory. This Special Issue welcomes contributions that bring a broader understanding of the existing link between geomagnetic field perturbations of external origin and the ionospheric dynamics under different conditions of the interplanetary plasma environment. In particular, we welcome works that focus on the modeling of physical processes that regulate the highly ionized upper atmosphere, such as the formation and evolution of ionospheric irregularities and the evolution of magnetospheric and ionospheric current systems. We also welcome contributions on the acquisition of capabilities for predicting the effects of the perturbed ionosphere on technological systems, thus contributing to studies of space weather.

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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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