

Special Issue

Equatorial-Low-Latitude Plasma Bubble Dynamics: Recent Observations and Simulations

Message from the Guest Editors

Plasma bubbles are robust plasma disturbances in the equatorial-low-latitude ionospheric F region that cause significant density depletion and electric field during the evening and nighttime. Their presence causes the range and frequency spread and scintillations in radio waves. In recent years, the focus has shifted from well-understood long-term forecasting or variability. These studies have shown the complex nature of large-scale-wave structures and traveling-ionospheric disturbance energetics, and their impact on plasma instabilities are responsible for short-term variability. Moreover, concurrent observational and simulation studies of these energetics may offer an efficient framework for short-term forecasting. This Special Issue focuses on the observation and simulation studies of large-scale-wave structures, traveling-ionospheric disturbances, and gradient-driven plasma instabilities to decode the role of these energetics in the day-to-day variability of plasma bubbles and possible short-term forecasting.

Guest Editors

Dr. Esfhan Alam Kherani

Division of Helophysics, Planetary Science and Aeronomy, National Institute of Space Research, São José dos Campos 78055-840, SP, Brazil

Dr. Rodolfo de Jesus

Division of Helophysics, Planetary Science and Aeronomy, National Institute of Space Research, São José dos Campos 78055-840, SP, Brazil

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

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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

Dr. Daniele Contini

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

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