Special Issue

The Influence of Solar and Astronomical Factors on Earth

Message from the Guest Editor

The influence of astronomical factors on the Earth's climate is also practically beyond doubt, as can be seen from the Milankovitch (orbital) cycles. These cycles are associated with variations in the parameters of the Earth's orbit (precession, change in eccentricity, and obliquity) and affect the amount of energy that Earth absorbs from the Sun. They operate on long time scales, ranging from tens of thousands to hundreds of thousands of years, and influence long-term changes in the Earth's climate, including the beginning and end of glaciation periods. Recently, evidence has been obtained that shorter-term astronomical cycles can also affect climate fluctuations. However, significant uncertainty remains in these matters. In addition, the mechanisms by which solar and astronomical factors affect the state of the atmosphere have not yet been clarified, so the question of their possible contribution to climate change in various regions of the Earth remains open. Therefore, further study of the influence of solar and astronomical factors on the Earth's climate is of considerable interest not only from a scientific, but also from a practical point of view.

Guest Editor

Dr. Maxim G. Ogurtsov

Laboratory of Cosmic Ray Physics, Ioffe Physico□Technical Institute of Russian Academy of Sciences, 194021 St. Petersburg, Russia

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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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