

Letter from the Editor

The year 2014 will be full of challenges for all who are devoted to atmospheric sciences. The weather events of 2013 warn us that the effects of climate change are becoming increasingly severe. In Mexico, for example, for the first time in 55 years, a cyclone from the Gulf of Mexico (Ingrid) and a tropical storm from the Pacific (Manuel) hit the country concurrently, causing extensive flooding and fatal landslides.

Thus, in addition to everyday work of creating and disseminating knowledge in our specific fields, in 2014 atmospheric scientists will have the responsibility of warning politicians and decision makers about the risks that climate change imposes on our societies and economies, and of convincing them that mitigation and adaptation measures are imperative and cannot be delayed any longer.

In this issue (the first of our 27th volume) *Atmósfera* includes, as usual, articles on a wide range of subjects and geographical regions. Luis F. Pineda Martínez *et al.* study the dispersion of atmospheric coarse particulate matter in the urban area of San Luis Potosí, as a contribution to the study of atmospheric pollution in Mexico; Daniel Victor Carbutaru *et al.* analyze the errors and limitations of weather-radar observations due to the three-body scatter signature, an artifact caused by large hail (a common phenomenon in Romania) that disturbs Doppler velocity fields, creating false mesocyclonic and tornadic vortex signatures; Muhammad Nasiruddin Khan and Anila Sarwar analyze temporal changes in the composition of 20 samples of rainwater in the arid region of Karachi, Pakistan, in order to identify the chemical composition of air pollutants wet precipitation; Fabiola Arellano Lara and Carlos A. Escalante Sandoval carry out the delineation of homogeneous precipitation regions for a region in northwestern Mexico, based on the multivariate methods of principal component analysis and hierarchical ascending clustering; Yu Woon Jang *et al.* use the Carbon Tracker system—developed by NOAA/ESRL to keep track of CO₂ uptake and release at the Earth's surface over time—to understand the trends in carbon fluxes in the biosphere and ocean, as well as emissions from forest fires and fossil fuel use in Latin America and the Caribbean; Bernardo Figueroa Espinoza *et al.* establish wind power density, vertical velocity profiles, and other wind characteristics using data from a meteorological mast located close to the shoreline in the northwest of the Yucatan peninsula in the Gulf of Mexico, in order to estimate the wind power potential in that region; finally, Maritza L. Arganis Juárez *et al.* compare historic records of the North Atlantic Oscillation Index with synthetic records of longer duration generated using the year interchange method, the Svanidze fragments method, and the Fiering method, which can be applied to simulation models for the long-term analysis of the teleconnection index behavior.

May the year ahead be full of personal and professional achievements,

Carlos Gay
Chief Editor