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IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

Special Issue on

“Advancements in the Next Generation of LEO and GEO Microwave and Infrared Sounders”

This special issue will focus on current progress, research and development made toward future microwave and infrared sounders onboard both LEO and GEO satellites. In the past decades, there has been much effort and progress toward advancing microwave and infrared sounders on LEO and GEO satellites. Those instruments have been providing high quality Earth observations. Those observations are pivotal for weather and climate applications and are being assimilated on a daily basis at Numerical Weather Prediction centers all around the world. Observations from LEO and GEO Microwave and Infrared Sounders have shown their capability to support the generation of accurate global atmospheric temperature, water vapor and trace gas column abundances. Infrared sounder observations provide high vertical resolution capabilities, while microwave sounder observations enable all-weather condition capabilities. A key component for further observational improvements is through increased temporal, spatial and spectral resolution and coverage, which can be realized with new architectures and new generation of infrared and microwave sounders on LEO and GEO satellites. In this respect, taking advantage of the synergetic use of the next generation of microwave and infrared sounders is relevant for the planning of the next generation of observational systems.

Earth observations from LEO and GEO satellites are complementary and are needed to further understand the evolution of environmental processes, leading to more accurate weather forecasts and critical climate products. This special issue is organized to provide useful information for the planning and decision making of the next generation of environmental observation systems. The next architecture of observing systems is expected to provide continuity, redundancy and enhance critical capabilities needed for weather forecasting and environmental monitoring.

The broad topics include (but are not limited to):

- The progress of new LEO/GEO Microwave and Infrared sounder missions.
- The development of new instrument concepts and studies for the next generation of LEO/GEO Microwave and Infrared sounders.
- New observing system architectures of LEO/GEO Microwave and Infrared sounders.
- Lessons learned from previous LEO/GEO Microwave and Infrared sounding missions.
- The impact of the new generation of Microwave and Infrared sounders in weather forecasting, environmental monitoring, atmospheric chemistry and climate applications.

Schedule

Dec 1, 2020 Submission system opening

~~May 30, 2021~~ Submission system closing

New submission closing time: Aug 30, 2021

Format

All submissions will be peer reviewed according to the IEEE Geoscience and Remote Sensing Society guidelines. Submitted articles should not have been published or be under review elsewhere. Submit your manuscript on <http://mc.manuscriptcentral.com/jstars>, using the Manuscript Central interface and select the “**Advancements in the Next Generation of LEO and GEO Microwave and Infrared Sounders**” special issue manuscript type. Prospective authors should consult the site <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9082768> for guidelines and information on paper submission. All submissions must be formatted using the IEEE standard format (double column, single spaced). Please visit http://www.ieee.org/publications_standards/publications/authors/author_templates.html to download a template for transactions. Please note that as of Jan. 1, 2020, IEEE J-STARS has become a fully open-access journal charging a flat publication fee \$1,250 per paper.

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