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

Special Issue on "Radiation modeling and Remote Sensing"

Radiation modeling plays an increasing role in the domain of remote sensing (RS), including better interpretation of satellite observations in terms of geoscience parameters of our Planet, the definition of RS satellite missions, technology development, etc. Depending on the objectives, modeling approaches are more or less complex. Some models are parametric with possible calibration using ground and RS observations or outputs of more complex models. Other models simulate the physical propagation of radiation in the atmosphere and Earth surfaces. Also, some models simulate all the radiative events from the radiation source to the sensor, whereas others focus on a single component such as radiative transfer in the atmosphere, vegetation canopy, leaf elements, etc. With the continued increased availability of low-cost computing power and further development of realistic forward models, there has been boost in research activities generating and using radiation modelling tools in remote sensing.

This special issue of JSTARS will provide the state-of-the-art overview in development and use of radiative simulations for remote sensing and will highlight the important role of data simulation in remote sensing research and development. Prospective authors are encouraged to document and share details of their simulation models and approaches. This special issue will also help to highlight gaps and burning needs in radiation modelling science.

The Guest Editors are Co-Chairs and members of the GRSS Technical Committee on Modeling in Remote Sensing (MIRS). The special issue is one of the activities of this Technical Committee (http://www.grss-ieee.org/community/technical-committees/modeling-in-remote-sensing/).

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

- Simulation of all types of remote sensing data: multispectral / hyperspectral in the short and long waves, including sun-induced fluorescence, microwave radiometry, synthetic aperture radar, scatterometry, lidar.
- First-principles modeling for remotely sensed data simulation
- Verification and validation of models and simulated data
- High-speed computational implementations of simulation codes
- Innovative applications of data simulation for remotely sensed data analysis and inversion
- Engineering tools for remote sensing instrument design

Schedule
December 1, 2020 Submission system opening
June 30, 2021 Submission system closing

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 "**Radiation modeling and Remote Sensing**" 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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