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**IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing**  
**Special Issue on “Advances in remote sensing of mountain surface processes”**

Mountains are the world’s “water towers”, providing 60-80% of all freshwater resources for our planet. Occupying about one fifth of the Earth’s surface, Mountains are home to approximately one tenth of the global population and at least half of the world’s population depends on mountain ecosystem services to survive – not only water but also food and clean energy. Therefore, mountain environments are essential to the survival of global ecosystem and human well-being.

To elucidate the dynamics of mountain eco-environment and their underlying mechanism, Remote Sensing (RS) has become an indispensable way to capture land surface processes and their variations over mountain areas, which greatly alleviates the under-representativeness of traditional field-based observations induced by the high spatio-temporal heterogeneity of mountain environment. In recent decades, with the rapid developments in RS technologies, remote sensing of mountain surface processes has attracted increasing attentions from the RS community and important progresses have been achieved in different aspects, including mountain Radiative Transfer (RT) theories, retrieval algorithms for key parameters, and monitoring of mountain surface processes with long-term RS archives. However, further developments of remote sensing of mountain surface processes are still facing strong challenges, including issues such as strong topographic effects, frequent cloud cover, terrain shadowing, and limited validation with ground observations, and also the demands for satellite images with high spatio-temporal resolutions. To promote the research progress in this field, this Special Issue is aiming to present state-of-the-art advances in theoretical and practical approaches for remote sensing of mountain surface processes from local to global scales, in their assessment and validation across scales, and in operational applications that show their values.

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

- Mountain eco-environment remote sensing theory and technology
- Retrieval and validation of key mountain surface parameters
- Canopy reflectance modelling and emulation in mountains
- Datasets specially designed for studies of mountain surface processes
- Scale issues related to mountain surface processes monitoring
- Climate change assessment of mountain surface processes with long-term remote sensing observations
- Fusion of remote sensing observations in mountain surface processes simulation
- Surface process of mountain hazards monitoring with remote sensing

**Schedule**

Apr. 1, 2023: Submission system opening

Dec. 31, 2023: 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 “**Advances in remote sensing of mountain surface processes**” 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](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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