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EDITORIAL

Progress and Focus of Journal of Remote Sensing in 2021–2022

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Introduction of JRS

Remote sensing technology, which emerged in the 1960s, is an increasingly used support for understanding Earth's past, present, and future and opened a new chapter for humankind to explore Earth [1].

For communications in science and technology as well as spreading of new discoveries, scientific journals play an important role, where the remote sensing community has gained enormously from the many existing international journals in this field. They have not only expanded knowledge among global academic groups and government administrators but also substantial advanced the understanding of the public of the Earth through delivering exciting discoveries obtained from the satellite platforms. The Journal of Remote Sensing (JRS; <https://spj.science.org/journal/remotesensing>) is a new comer in sharing findings related to remote sensing among the internal communities

JRS is an online-only Open Access Science Partner Journal published in affiliation with the Aerospace Information Research Institute, Chinese Academy of Sciences and distributed by the American Association for the Advancement of Science. Like all partners participating in the Science Partner Journal program, JRS is editorially independent of the Science family of journals, and the Aerospace Information Research Institute, Chinese Academy of Sciences is responsible for all content published in the journal [1]. JRS focuses on the theory, science, and technology of remote sensing and interdisciplinary research with earth science and information science. The journal publishes original research articles, review articles, editorials, and perspectives.

JRS's editorial board comprises 31 active and distinguished scientists selected from 8 countries who have made significant and well-recognized contributions to the field. Editorial board members with affiliations in China are most represented (18), followed by those with affiliations in the United States (8). The overall duties of the editorial board members include overseeing the review process and soliciting submissions of high-quality manuscripts.

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Since its first publication in 2021, JRS has been an important platform for promoting high-quality international research and innovation in remote sensing. We would like to present a brief overview of its progresses over the last 2 years.

Submissions and Peer View in 2021–2022

Submissions

Over the past 2 years, JRS received 245 submissions. The top 5 leading contributors were China, India, the United States, Pakistan, and Ethiopia. Asia accounted for most of the submissions (62%), including 37% from China.

“Land cover and land use” and “Image processing, data fusion, data mining, and data assimilation” were the leading submission categories, accounting for 44.5% of submissions (24.5% and 20% for each category). There was at least one submission per category (Fig. 1).

Special issues

In the last 2 years, 6 special issues were successfully launched in JRS (Table 1). Manuscripts submitted as part of a special issue generally were assigned to a guest editor instead of an editorial board member to manage the peer review process. A guest editor is an expert in a subtopic who is invited by the editor-in-chief, in consultation with the editorial board, to provide specialized leadership for a particular special issue. Each special issue has 4 to 8 guest editors. Articles published in a special issue must adhere to the same evaluation criteria and publication ethics as a regular article published in JRS. The peer review process for a special issue manuscript follows the same process as a regular manuscript submitted to the journal.

Peer review process

High-quality peer review is extremely important for all top journals [2]. JRS evaluates manuscripts within the journal's scope in the following 4 dimensions: scope, novelty, methods,

and conclusions. The information should not already exist in the literature. Ideally, it should also have potential implications within and outside the field. The approach should be clear, appropriate, rigorous, and current. Finally, the evidence provided should justify the conclusions, and the conclusions should be compelling enough to deserve publication.

A decision can be made at any point in the evaluation process, with or without one review. An associate editor makes the final decision on every manuscript.

There is an urgent need to improve the reuse of scientific data. One of the most prominent approaches in this regard is the FAIR (findable, accessible, interoperable, and reusable) approach, which summarizes what data need to be as usable and valuable as possible [3]. Authors of the JRS are strongly encouraged to deposit the data that support their research in a trusted repository that supports the FAIR principles. When the supporting data cannot be publicly shared, authors must provide all necessary information, so interested researchers can request access to the data.

JRS pursues a balance between high-quality reviews and fast publication. In the past 2 years, it took 3 d for a manuscript to complete a technical check, and about a week to invite reviewers by an associate editor. After that, on average, the manuscripts receive the first decision within 28.9 d (Table 2).

Publications and Citations in 2021–2022

Publications

The journal accepts submissions for original research articles, review articles, editorials, and perspectives. A total of 47 papers were published in the journal's 2 years of operation: 21 and 26 papers were published in 2021 and 2022, respectively. Research articles made up the bulk of publications in 2022 (36), followed by review articles (8) and perspective articles (2).

Publications were from China, the United States, Australia, the Netherlands, and Sweden, among which manuscripts from China and the United States account for 63% and 30%, respectively.

“Image processing, data fusion, data mining, and data assimilation” was the leading publication category, with 21% under this category in 2021 and 2022. “Biogeosciences remote sensing,” “Agriculture, forestry, and range,” and “Ocean and inland water remote sensing” contributed 17%, 15%, and 13% each, respectively (Fig. 2).

Many exciting papers were published in JRS in the past 2 years, with contributions covered new radiative transfer models, innovative algorithms, state-of-the-art datasets, important earth science discoveries, and in-depth reviews or perspectives.

- Radiative transfer modeling is extremely important for understanding the interaction between Earth's surfaces and electromagnetic waves and for retrieving land and ocean parameters. A novel air-to-soil transition model was developed to incorporate the dielectric roughness characterized by soil moisture and geometric roughness effects and to demonstrate the necessity of the air-to-soil transition model for modeling L-band brightness temperature, which is important for improving soil moisture retrieval at the global scale [4]. A semiempirical speedup method was proposed for canopy reflectance simulation based on a large-scale remote sensing data and image simulation model with an acceleration of more than 320 times, which is a key step to promote 3-dimensional (3D) radiative transfer models in practical remote sensing applications [5].
- Many papers that focused on novel and advanced algorithms were also published in JRS. Nathan et al. [6] designed an initial lightweight and drone-operated 1D

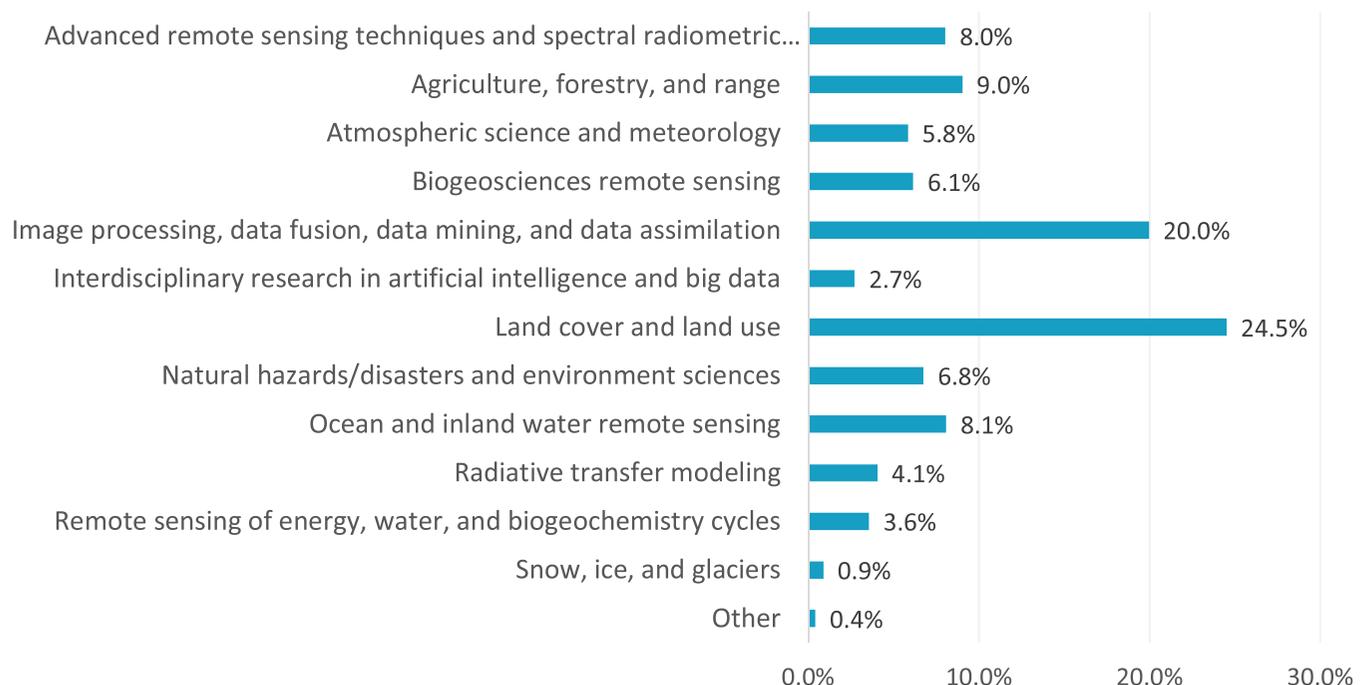


Fig. 1. Submission categories in 2021 and 2022.

camera array that supports parallel synthetic aperture aerial imaging, which enables tracking of moving people through densely occluding forests. A high-accuracy framework was suggested for building-level population estimation by integrating light detection and ranging (LiDAR), nighttime light, and point of interest data [7]. A new method was proposed to characterize the possible change of G-function of coniferous canopies and its effect on leaf area index retrieval, which indicates a suitable viewing zenith angle between 45° and 65° for accurate retrieval of leaf area index [8]. A prototype system was presented to map the confidence of the bottom depth of optically shallow waters through the fusion of LiDAR and multiband image data [9], which has been lacking up to now in the practices of passive remote sensing of bathymetry. Li et al. [10] substantially accelerate retrievals of NO₂ vertical columns from TROPOMI (TROPOspheric Monitoring Instrument) spectral radiances using a neural network trained by radiative transfer simulations. Moreover, they prove that the machine learning exploitation of satellite observational information is 12 times faster than predictions using a priori profiles from chemical transport modeling while keeping the same accuracy [11].

- Some state-of-the-art datasets derived from spaceborne remote sensing data were available in publications in JRS. A time-weighted dynamic time-warping method was utilized

to identify planting areas of maize in China from 2016 to 2020, with a producer's accuracy at 76.15% and a user's accuracy at 81.59% [12]. Derived from PALSAR (Phased Array type L-band Synthetic Aperture Radar) and MODIS (Moderate-Resolution Imaging Spectroradiometer) images over Australia, a new annual forest mapping approach estimates 32 million ha of forest in 2010 over Australia, with 73% of forest pixels meeting the FAO forest definition, much higher than the other 4 widely used forest maps (ranging from 36.0% to 52.0%) [13]. A virtual image pair-based spatiotemporal fusion model was designed to simulate the 9-km Soil Moisture Active Passive (SMAP) data after the failure of the active radar and to develop an 8-d composite 9-km SMAP data at the global scale from 2015 to 2020, which is very important for research and applications in hydrology, climatology, ecology, etc. [14].

- Some papers on major scientific discoveries from remote sensing data were also available in JRS. For example, according to the wetland dynamics mapped using time series Landsat data at the 57 Ramsar wetlands in China, the consistent expansion of anthropogenic land covers (mainly aquaculture pond expansion and *Spartina alterniflora* invasion) occurred within 43 (75.0%) Ramsar sites, especially in eastern China [15]. The thermokarst landscape dynamics in the Arctic permafrost region demonstrated that the widespread disturbances would destabilize fragile thermokarst landscapes rich in soil

Table 1. The 6 special issues in JRS launched in 2021–2022.

| Title | Aims | Deadline |
|--|---|-------------------|
| Developing Open-Source Remote Sensing Data Products for Economic, Environmental, and Societal Advancements | Demonstrating state-of-the-art data products relevant to large-scale studies using Earth Observations, particularly at global and regional scales. | 2023 September 15 |
| Remote Sensing Time Series Analysis | Topics of interest including time series analysis algorithms, fusion of multisource time series data, time series applications, preprocessing and calibration of time series data, and also validation for time series products. | 2023 June 30 |
| Deep Learning Meets Remote Sensing: Advances in Data-Driven Models | New data-driven methods, algorithms, and architectures of deep learning for remote sensing, especially the work that addresses the field's challenges. | 2023 March 31 |
| Radiation Transfer Modeling With Radiation Transfer Model Intercomparison Vegetation Canopies | Using Radiation Transfer Model Intercomparison-I to Radiation Transfer Model Intercomparison-V vegetation canopies to model various RS data in other spectral and research domains, including (but not limited to) thermal infrared remote sensing, terrestrial and airborne LiDAR, or solar-induced chlorophyll fluorescence observations. | 2023 March 31 |
| China's Contemporary Satellite Remote Sensing Payloads and Applications in Earth and Space Sciences | Current progress related to China's advanced satellite remote sensing payloads for Earth and planetary observations and applications in space science, such as environment, meteorology, ocean, resources, surveying, and mapping. | 2022 December 31 |
| Remote Sensing for Environmental and Societal Changes Using Google Earth Engine | State-of-the-art Google Earth Engine applications for benefit of the environment and human society at various spatial and temporal scales, as well as prospects for future development. | 2022 October 31 |

organic carbon and affect the ecological carbon balance [16]. A continued increase in annual gross primary productivity in most urban regions during 2000–2016 was

Table 2. Journal turnaround time.

| Metric | Time |
|---|------|
| Submission to technical check complete Average number of days between the manuscript was received and a technical check was completed. | 3.2 |
| Technical check complete to editor assignment Average number of days between the date the technical check was completed and the first editor was assigned | 0.4 |
| Submission to editor assignment Average number of days between the date the manuscript was received and the first editor was assigned. | 2.5 |
| Submission to reviewer invitation Average number of days between the date the manuscript was received and the first reviewer was invited. | 7.8 |
| Submission to first decision Average number of days between the date the manuscript was received and the first decision. | 28.9 |

Note: This section includes submissions received by the journal office during the specified period. The statistics indicate how long key activities take in the process.

suggested, shedding new insight into the importance of urban areas on the terrestrial carbon cycle [17]. The global terrestrial net ecosystem exchange from April 2017 to March 2018 was inversed using TanSat XCO₂ data, giving a value of $-3.46 \text{ PgC year}^{-1}$, which is higher than an earlier estimate ($-2.98 \text{ PgC year}^{-1}$) [18].

- JRS papers also highlighted some in-depth reviews or perspectives for the remote sensing community, such as the recent developments, consistency analysis, and prospect on finer-resolution mapping of global land cover [19]; a state-of-the-art review and perspective for mapping tree species using advanced remote sensing technologies [20]; the challenges and opportunities in mapping crop phenology in near real time using satellite remote sensing [21]; the constraints and opportunities for detecting land surface phenology in drylands [22]; the current status and emerging opportunities in satellite remote sensing of savannas [23]; an insightful understanding on the 2 faces of “Case-1” water: qualitative definition of Case-1/Case-2 versus the practical separation of Case-1/Case-2 [24]; and a perspective on taking advantage of recent developed artificial intelligence technology for information mining from remote sensing imagery [10].

Citations

According to the records in the Dimensions.AI database (the world's largest linked research information dataset), the 47 JRS papers published in 2021–2022 received more than 300 citations in the same period.

Journal citation is an important indicator of a journal's significance [2]. For example, JRS papers were cited by 101 journals, including 43 Q1 journals in the Journal Citation Reports,

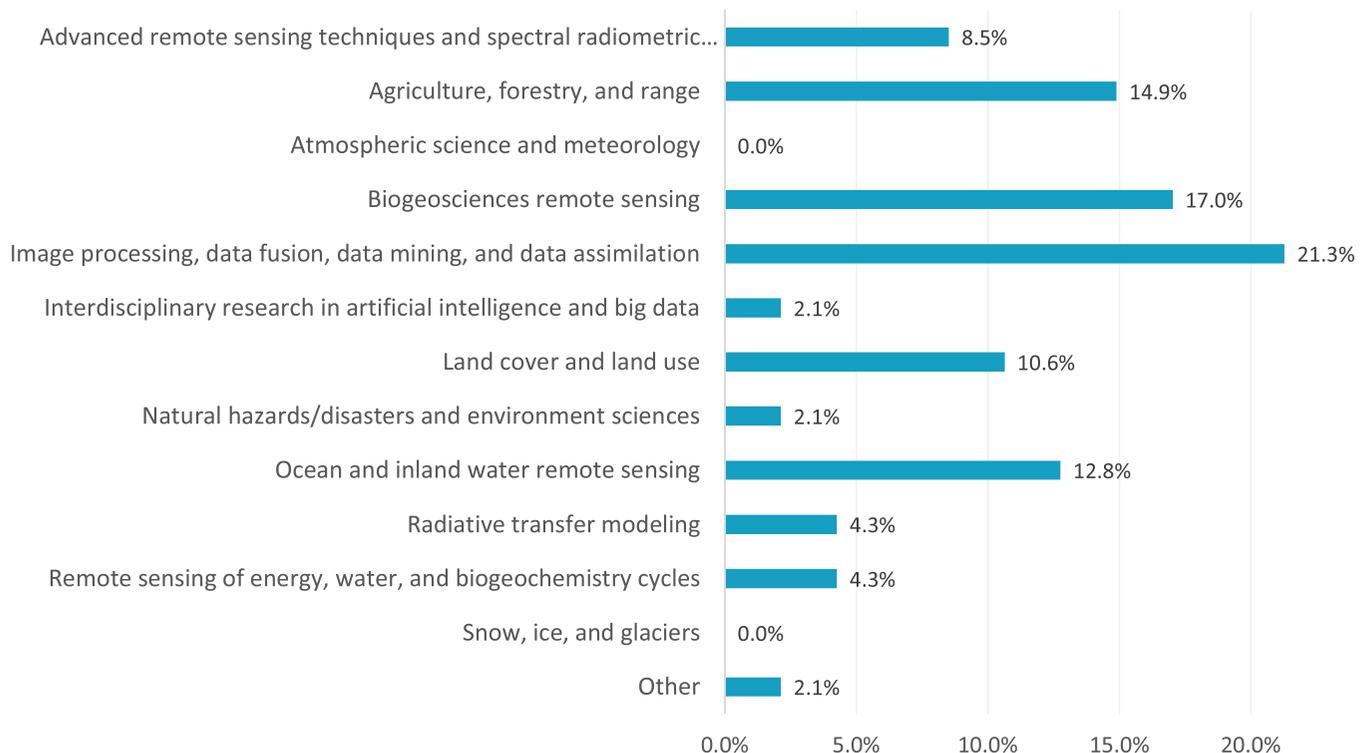


Fig. 2. Publication categories in 2021 and 2022.

accounting for 64.8% of the total citations of JRS papers. Figure 3 shows the top 20 journals in terms of citations of JRS papers, including 13 leading major journals in earth science and remote sensing, some of which are *Nature*, *Remote Sensing of Environment*, *IEEE Transactions on Geoscience and Remote Sensing*, *Earth System Science Data*, and *ISPRS Journal of Photogrammetry and Remote Sensing*.

We also compared to the Dimensions.AI citation metric of JRS papers to other journals whose titles include “remote sensing.” JRS ranks fourth among all these remote sensing journals (>30), with an average citation of 6.5 times, only next to *Remote Sensing of Environment*, *IEEE Geoscience and Remote Sensing Magazine*, and *ISPRS Journal of Photogrammetry and Remote Sensing*. This citation metric is very encouraging for a new journal launched only 2 years ago.

Focusing on the Future

Index inclusion

JRS is currently indexed in CAB Abstracts, CNKI Scholar, Directory of Open Access Journals, Inspec, and SAO/NASA Astrophysics Data System, and the journal will soon meet the publication history or milestones output which we will submit the journal for additional index opportunities like the web of science and expand the journal’s reach.

Increase international submissions

In the early stages of a journal, receiving a steady stream of high-quality submissions is of utmost importance. The journal currently shows positive submission levels but needs more international submissions, especially in the categories of “atmospheric science and meteorology” and “snow, ice, and glaciers.”

Diversity

The journal has established an expert editorial team, although representation tilts toward experts with affiliations in Asia. Interested professional from other regions, such as Europe, Asia, and South America, especially female professionals, are welcome to join the board, which will improve the journal’s network and ability to increase submissions and publications.

Improving the author–reader experience

As a science partner journal, JRS aims to provide flexible, high-quality production and online distribution services to all our readers. In 2023, JRS moved to Atypon’s online publishing platform, Literatum. The new website has a more apparent structure, allowing users to browse and discover content more efficiently, with enhanced visibility for references and figures in research articles.

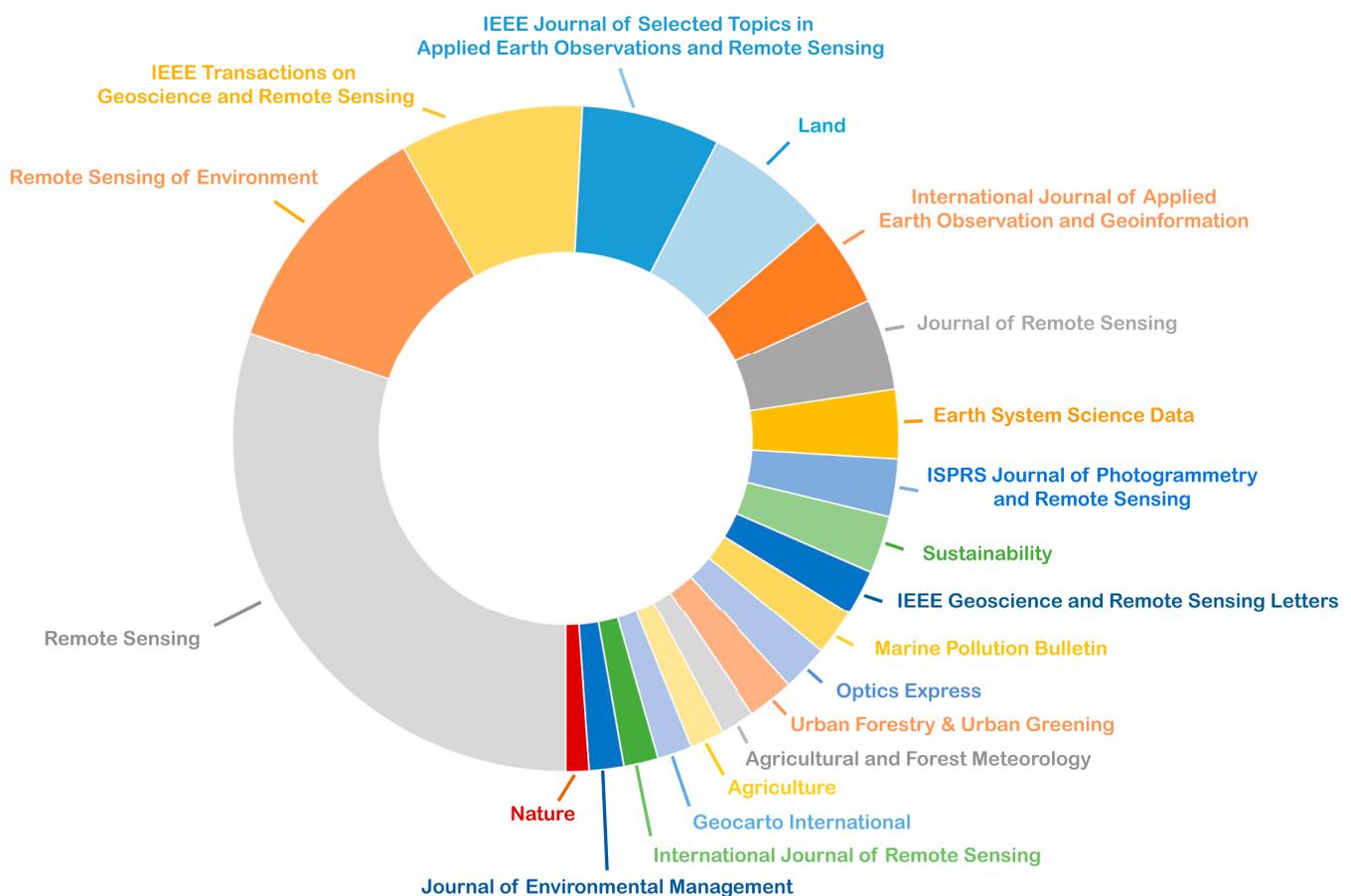


Fig. 3. Journals citing JRS papers in 2021–2022 according to citation records in the Dimensions.AI database.

Preferential policy on article processing charges

The team of JRS will strive hard for funds to continue the practice of free publishing, minimum article processing charge. In the case that some article processing fees may have to be charged in the future, partial discounts or complete exemptions will be provided to scholars who have made outstanding contributions to JRS. Moreover, we will offer full APC waivers to authors in the developing world (Hinari A and B countries), and full or partial waivers may be available to those experiencing financial difficulties.

Acknowledgments

The editors are grateful to the editorial board, authors, and reviewers for their outstanding contributions to the journal in the past 2 years. JRS will continue to evolve, focusing on novel and exceptional work of international interest in remote sensing. In addition, the editors will continue to optimize the review process to improve the quality of peer review and provide better service for each publication, which is very important to make JRS a well-known top journal in the remote sensing field. **Competing interests:** The authors declare that there are no conflicts of interest regarding the publication of this article.

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