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IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
Special Issue on “Recent Advances in land cover and land use classification”

Urban land-use and land-cover (LULC) maps are commonly used as a tool in urban analysis for diverse applications in the geospatial field, such as urban and regional planning, environmental monitoring and management. Remote sensing techniques have been demonstrated effective to provide the primary data for LULC inventory and mapping. In this era, satellites employing novel sensor technologies and mission concepts are in service or will be deployed. We have access to very large and ever-growing data volumes, and often on a global scale which enables tackling global applications. However, the flourish of remote sensing images does not necessarily guarantee the increase of classification accuracy of LULC map. Besides, the patterns of resource use and resource demand are constantly changing. In fact, there is no one ideal classification of LULC, and it is unlikely that one could ever be developed. Hence, there is no logical reason to expect that one detailed inventory should be adequate for more than a short time, especially when LULC patterns change in keeping with demands for natural resources. In attempting to develop classification systems for use with remote sensing techniques that will provide reliable information to satisfy the needs of users, more efforts must be made.

Data processing or interpretation techniques concerning LULC mapping are various, and extensive efforts can be done to perfect new interpretation techniques and procedures. For example, the very high resolution (VHR) remote sensing data are able to provide subtle spatial information of the ground objects such as the geometry, texture, size and position information. However, the variability of the object categories and the diversity of the object distributions in the land-use mapping units lead to the “semantic gap” between the low-level data and the high-level semantic information. Meanwhile, different sources of remote sensing images (multi-sensor, multi-scale, and multi-temporal) contain information from different domains. The topic regarding how to improve the LULC classification with multi-source data also should be paid attention to. Besides, along with the advance of time resolution of remote sensing images the images of long-term sequences can not only produce periodic changes of the land cover such as crops and wetlands but also reflect the changes of land use dynamics. This special issue will provide a venue for publishing papers related to the innovation of key technologies in LULC classification field.

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

- Supervised/weakly-supervised/unsupervised land cover/land use classification with data from different remote sensing sensors, e.g., hyperspectral, multispectral, optical images and synthetic aperture radar (SAR) data;
- Change detection with remote sensing imagery;
- Time series analysis with remote sensing imagery;
- Machine learning methods including active learning, transfer learning, deep learning and so on;
- Feature learning and feature representation;
- Novel benchmark data for remote sensing image classification;
- Land cover/land use mapping with Google Earth Engine;
- Multi-source remote sensing image fusion.

Schedule

January 1, 2021 Submission system opening
September 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 “**Recent Advances in land cover and land use classification**” 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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