CALL FOR PAPERS

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

Special Issue on "Intelligent Scheduling for Multiple Earth Observation Resources"

Earth observation aims to collect images through observation resources equipped with sensors. It has been broadly applied in the domains of disaster surveillance, environmental monitoring, and scientific research, etc. So far, various observation resources, e.g., Earth observation satellites, unmanned aerial vehicles (UAVs) and airships, have been involved in the observation activities. However, how to design intelligent algorithms to coordinate all the observation resources and systematically enhance the overall observation efficiency remains a big challenge.

Challenges to intelligently address the Earth observation scheduling problem include the systematic modelling building upon multiple observation resources, the prohibitively high computational complexity for large-scale Earth observation scheduling, and the difficulty for human users or decision makers to clearly compare and estimate the developed scheduling models and algorithms. In addition, existing scheduling models and algorithms based on single observation resource are also promising to be further improved and integrated with multiple resources. Finally, real-world implementation of the models and algorithms of Earth observation scheduling also becomes a grand challenge in practice. This special issue aims to discuss the philosophical changes needed in addressing Earth observation scheduling problems and evaluating the quality of the solution that would be obtained. It will present most recent advances in theory, model& algorithm developments and applications for Earth observation scheduling problems.

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

- Algorithm design including mathematical programming, heuristic, metaheuristic, reinforcement learning and hybrid algorithm, etc.
- Benchmark problems
- Dynamic/autonomous intelligent Earth observation scheduling
- Earth observation scheduling with real-world constraints
- Earth observation scheduling with point/area/moving targets
- Earth observation scheduling with satellites/UAVs/airships
- Integrated Earth observation scheduling with imaging data transmission
- Large scale intelligent Earth observation scheduling
- Multi-objective optimization for Earth observation scheduling
- Visual simulation platform of intelligent Earth observation scheduling

Schedule

June 1, 2021	Submission system opening
December 31, 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 "**Intelligent Scheduling for Multiple Earth Observation Resources**" 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.

Guest Editors

Guohua Wu	Central South University, China (guohuawu@csu.edu.cn)
Xinwei Wang	TU Delft, the Netherlands (x.w.wang@tudelft.nl)
Xin Huang	Wuhan University, China (xhuang@whu.edu.cn)
Witold Pedrycz	University of Alberta, Canada (wpedrycz@ualberta.ca)