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IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
Special Issue on
“Learning and Reasoning From Multi-Modal Data For Disaster Response”

For a long time, the land resources and ecological environment have been threatened by various natural disasters or disasters caused by human socio-economic construction. In order to monitor the occurrence of disasters and reduce the degree of harm after disasters, it is particularly important to carry out disaster emergency response tasks. Disaster emergency information is composed of a large amount of multimodal data, including historical spaceborne, unmanned aerial vehicle, ground spectrum, field photos, location information, temperature and humidity etc. Because these multimodal data possess different data structures characteristics, it is difficult to extract valuable information from them to support emergency response decision making. Besides, before disaster emergency information extraction, some extreme conditions need to be considered firstly (1) ground communication is usually blocked when disasters occur, resulting in it is difficult to effectively transmit multi-modal data collected; (2) Due to the damage of ground CORS net, positioning accuracy is very low or even impossible to obtain.

Therefore, the three key problems of disaster emergency response are: (1) How to obtain accurate location information during collection of multi-modal data under the condition of communication blocking; (2) How to learn valuable disaster emergency information from these multimodal data; (3) How to effectively transmit disaster emergency data and information by self-constructed communication network. Time is of the essence for emergency response. Therefore, how to collect, process and transmit emergency information quickly, or even in real time is one of the key research issues.

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

- Satellite-based enhancement and differential positioning technology
- Multi-modal data registration, fusion, and quality enhancement
- Multi-modal data information extraction for disaster emergency
- Earth observation for damage recognition in various disaster types
- Damage assessment in urban and agricultural environments
- Single image depth estimation for disaster affected object
- Multi-modal remote sensing data change detection
- Heterogeneous communication network fusion technology
- Real-time and reliable transmission of multi-modal emergency data
- Deep learning theory and its applications in disaster emergency response

Schedule

1 Jun 2022 Submission system opening
31 December 2022 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 “**Learning and Reasoning From Multi-Modal Data For Disaster Response**” 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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