



Track 10 - Geospatial Technologies and Geographic Information Science for Crisis Management (GIS)

With crisis and hazardous events being an “inherently spatial” problem, geospatial information and technologies have been widely employed for supporting disaster and crisis management. This was further highlighted during the response to the 2020 Coronavirus pandemic, which is relying extensively on spatial analysis for managing the virus dissemination pathways and fighting against the virus propagation. Therefore, geospatial methods and tools - such as Spatial Decision Support Systems (SDSS), Geographic Information Systems (GIS) architectures, Volunteered Geographic Information (VGI), spatial databases, spatial-temporal methods, as well as geovisual analytics technologies - have a great potential to contribute to, understand the geospatial characteristics of a crisis, estimate damaged areas, define evacuation routes, and plan resource distribution. Collaborative platforms like OpenStreetMap (OSM) have also been employed to support disaster management (e.g., in near real-time mapping). Nevertheless, all these geospatial big data pose new challenges for not only geospatial data visualization, but also data modeling and analysis; existing technologies, methodologies, and approaches now have to deal with data shared in various formats, different velocities, and uncertainties.

Furthermore, new issues have been also emerging in urban computing and smart cities for making communities more resilient against disasters. In line with this year's conference theme, the GIS Track particularly welcomes submissions addressing aspects of geospatial information in disaster risk and crisis research, and how this geospatial information should embrace the interdisciplinary nature of crisis situations. This includes exploring bridges between geospatial data science methods and tools and other related fields, including (but not limited to): computing disciplines (e.g. AI and machine learning), social sciences (e.g. socio-spatial aspects of risk and

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resilience, community resilience, participation and governance) and humanities (e.g. spatial humanities and spatial digital arts).s. We seek conceptual, theoretical, technological, methodological, empirical contributions, as well as research papers employing different methodologies, e.g., design-oriented research, case studies, and action research. Solid student contributions are welcome.

TRACK FORMAT

The GIS Track will adopt two presentation formats: a) plenary sessions and poster sessions. Plenary sessions will provide a room for authors of papers briefly present and debate their work with their peers. For making these sessions as interactive as possible, chairs of a session will recommend that authors of the same sessions prepare in advance a set of questions to the presenters. The main goal is that these questions could raise further questions about the presented works, and thus may lead to interesting discussions. In contrast, poster sessions provide an opportunity to debate on emerging trends of research, as well as insightful ideas in the area. During these sessions, systems demonstrations and preliminary results would be encouraged, as they could make the debates more interactive.

TRACK TOPICS

Track topics are therefore focused on but not limited to the following list:

- Geospatial data analytics for crisis management
- Location-based services and technologies for crisis management
- Geospatial ontology for crisis management
- Geospatial big data in the context of disaster and crisis management
- Geospatial linked data for crisis management
- Spatially explicit machine learning and Artificial Intelligence for crisis management
- Urban computing and geospatial aspects of smart cities for crisis management
- Spatial Decision Support Systems for crisis management
- Individual-centric geospatial information
- Remote sensing for crisis management
- Geospatial intelligence for crisis management
- Spatial data management for crisis management
- Spatial data infrastructure for crisis management
- Geovisual analytics for crisis management
- Spatial-temporal modeling in disaster and crisis context
- Crisis mapping and geovisualization
- Collaborative disaster mapping, citizen participation
- Public policies and governance for geospatial information
- Case studies of geospatial analysis/tools during a pandemic situation
- Empirical case studies

TRACK CHAIRS



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