



Annual Report

C20.13 Geographical
Information Science

Jun Xu

C20.13 Geographical Information Science

Report 2020

1. Membership

We restructured the steering committee in the year of 2020. The current steering committee consist of 2 co-chairs and other 9 members. The commission recruited new members in 2020. Currently, the commission has 26 members from 16 countries.

Co-chair

Fenzhen Su

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Co-chair

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The following list provides the members' names, institutional affiliations, and countries of other steering committee members.

Andrej Medvedeff	Institute for Geographie der Russian Academy of Science	Russia
Evelyn Uemaa	University of Tartu	Estonia

Shoaib Khalid	Government College University Faisalabad	Islamic Republic of Pakistan
Lars Brabyn	University of Waikato	New Zealand
Marco Helbig	Utrecht University	The Netherlands
Shawn Laffan	University of New South Wales	Australia
Masoud Minaei	Ferdowsi University of Mashhad (FUM)	Iran
Serafeim Alvanides	Leibniz Institute for the Social Sciences, Cologne	Germany
Motti Zohar	University of Haifa	Israel

2. Event: Fighting against COVID-19

The outbreak of 2019 novel coronavirus disease (COVID-19) at the end of 2019 seriously affected human life during the past year and has caused globally widespread concern. GIS and spatial big data technology can play an important role during the fight against COVID-19. Our commission members proposed ten challenges in using GIS with spatiotemporal big data and worked on rapid responses and analyses of dynamic epidemic information by solving these problems.

From the perspective of GIS technology, this study revolutionized the data acquisition methods through big data technology which achieved rapid data acquisition, constructed an analysis platform for timely epidemic analysis, and produced epidemic maps allowing timely dissemination of epidemic dynamic information.

From the perspective of spatial simulation and analysis, we calculated the overlap between the spatial tracking of the virus and that of patient trajectories via text spatialization technology, estimated population flow and spatial distribution, and then simulated the spatial transmission process.

The results of this work provided good references for the government in making strategic decisions against COVID-19. Our work was highly recognized by IGU and was distributed to the geographical society of each country.

3. Meetings

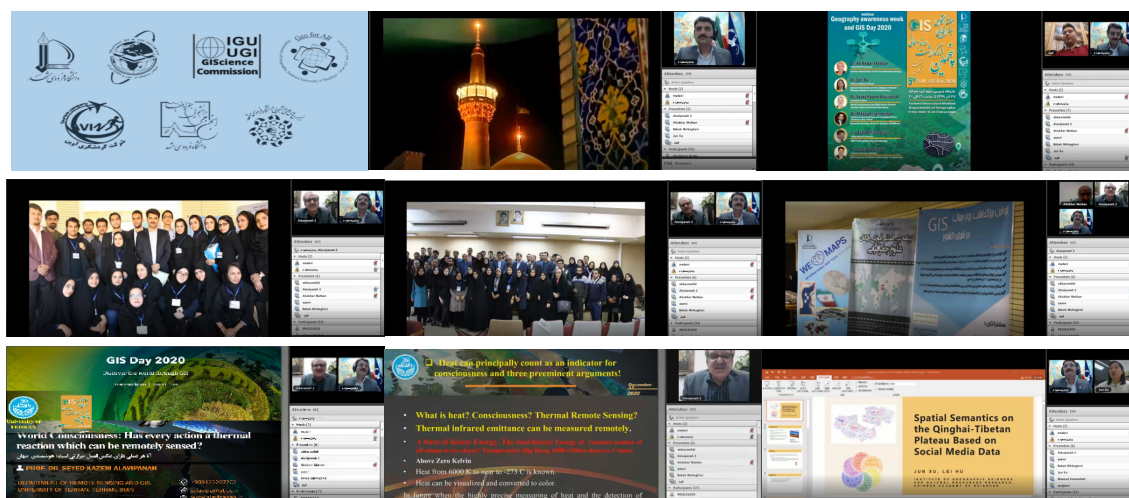
3.1 Celebration of GIS Awareness Week and World GIS Day

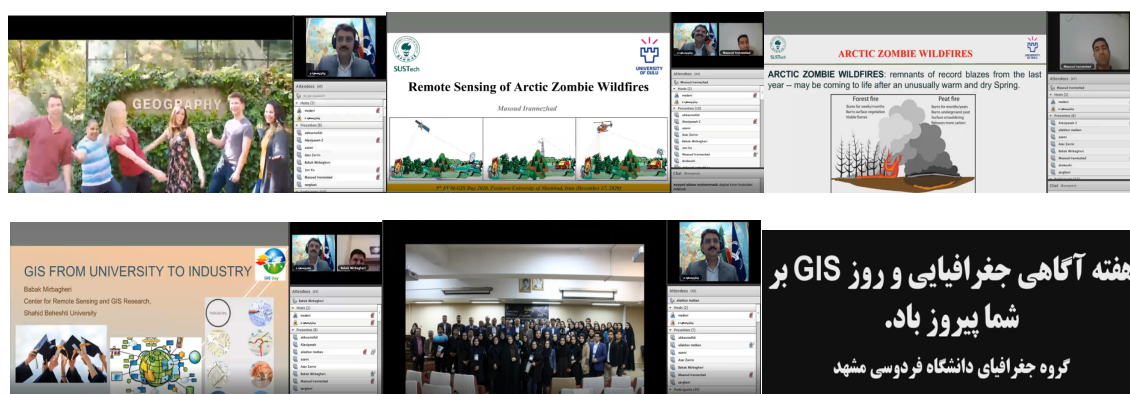
The 5th Celebration of GIS Awareness Week and World GIS Day (2020) was held online at the Department of Geography, Ferdowsi University of Mashhad, on December 17, 2020. It was jointly organized with the GIScience Commission of the International Geographical Union (IGU) and the Remote Sensing and GIS Association of Iran and in cooperation with FUM-GeoForAll, the Student Scientific Association of Geography and the Association of Geography Teachers of Khorasan Razavi Province.

The scientific secretary of this conference was the steering committee member, Dr. Masoud Minaei. The main purpose of the ceremony was creating more links between GIS and its sub-fields including GIS, remote sensing, cartography, etc. with the activities carried out in Iran. The conference began with a speech by Dr. Ehsan Ghabool, Director of International Academic and Scientific Relations and International Student Affairs, and Dr. Khoshsaligheh, Deputy for Research at the Faculty of Letters and Humanities. The session was continued with Dr. Mottakan's speech; while welcoming the online participants, he introduced the Iranian Remote Sensing and GIS Association and provided a report on the activities and history of this association. The keynote speakers of this conference were Dr. Seyed Kazem Alavi Panah, Professor of Remote Sensing and GIS, Faculty of Geography, University of Tehran, Dr. Jun xu, Professor of the Institute of Geographical Sciences and Natural Resources Research at Chinese Academy of Sciences, Dr. Masoud Irannejad, Researcher at SUSTech, China and Oulu University in Finland, Dr. Babak Mirbagheri, faculty member at the Remote Sensing and GIS Center of Shahid Beheshti University, and member of the board of directors of the Remote Sensing and GIS Association of Iran, and finally Dr. Masoud Minaei. The speakers delivered the following speeches:

- Iranian association of GIS and Remote Sensing.
- Spatial Semantics on the Qinghai- Tibetan Plateau Based on Social Media Data.
- World Consciousness: has Every Actions Thermal Reaction Which can be Remotely Sensed.
- Remote Sensing of arctic Zombie Wildfires.
- GIS from University to Industry.
- GIScience and Ferdowsi University of Mashhad

The participants of the conference were informed about the progress of this applied science and related issues in the world and in Iran. Finally, the conference ended with the call of the Department of Geography of Ferdowsi University of Mashhad for expanding voluntary activities in the field of free training of remote sensing and GIS via open-source software under the supervision of FUM-GeoForAll with the aim of creating a sustainable future for the planet earth.





3.2 Forthcoming meetings

We planned to continue the International Symposium on Spatial Data Handling (SDH) series in 2020. However, it was postponed to 2021 because of COVID-19. We plan to hold the 9th SDH will be held in Sakarya, Turkey on August 13-14, before the IGC. The theme of the symposium is “Spatial data handling for smart cities and earth system”. We have updated the website of the symposium at <https://sdh2021.sakarya.edu.tr/>.

4. Networking

It is the tradition that we have long cooperation with the IGU commission on Modelling Geographical Systems and Commission II of the International Society of Photogrammetry and Remote Sensing (ISPRS). In 2020, the commission cooperated the activity of GIS Awareness Week and World GIS Day at Department of Geography, Ferdowsi University of Mashhad. In the future, we shall establish and cooperate with local sub-committees in each member country, and we shall have more cooperation with other scientific groups.

5. Publication

5.1 Paper

The work of COVID-19 was published as journal paper:

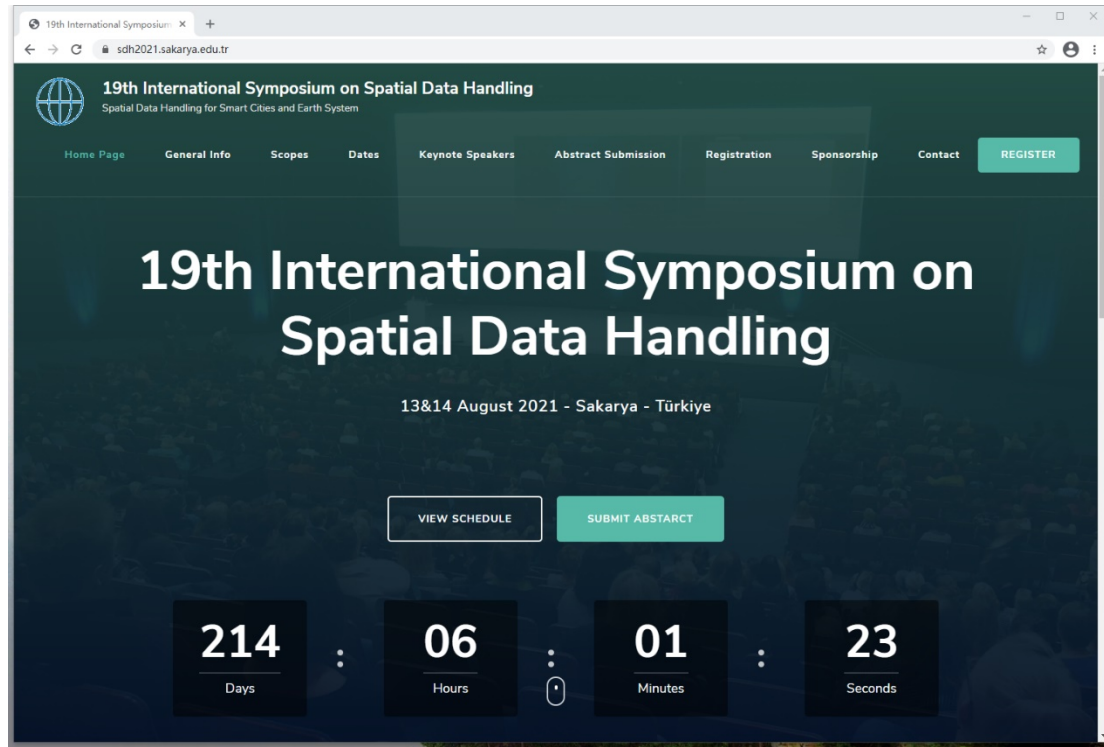
Zhou C.H., Su F.Z., Pei T., Zhang A., Du Y.Y., Luo B., Cao Z.D., Wang J.L., Yuan W., Zhu Y.Q., Song C, Chen J., Xu J., Li F.J., Ma T., Jiang L.L., Yan F.Q., Yi, J.W., Hu, Y.F., Liao Y.L. and Xiao H. 2020. COVID-19: Challenges to GIS with Big Data. *Geography and Sustainability*, 1: 77-87. doi: 10.1016/j.geosus.2020.03.005

5.2 Website

The website of the commission is <http://igugis.lreis.ac.cn/>. News about the commission is published on Google group. A frame of google group was embedded in the webpage of the commission, which is located at <http://igugis.lreis.ac.cn/igu6.html>.

5.3 Newsletter

We published the website of the symposium of SDH 2021, and posted the CFP and posters of the SDH 2021 on Google group. The commission members will help spread the symposium information in their countries.



The website of SDH 2021

6. Archival Contributions

During the period in question, no archival contributions have been made. We hope we can post events on IGU website in the future.