

# ICC 2019 Tokyo Tentative Program: Oral Session (as of 31 May 2019)

## Tue 16th July

### T01-1 Art, History & Design

Room: Saturn (Miraikan)

Datetime: Tue 16th July 8:30-10:20

Chair: *Sharon Hayashi* (York University)

T01-1-1 **Procedural Knowledge of Graphic Design for Analysing Graphic Elements in Historical Urban Maps**  
*Chenyang Xie*

T01-1-2 **Who were cartographers of manuscript topographic maps in the Enlightenment?**  
*Beata Medynska-Gulij*

T01-1-3 **3D art cartography in Belarus: The historical development and achievements in the modern period**  
*Anna German*

T01-1-4 **City maps: Dreams, Art, Cartography, Planning**  
*Cosimo Palagiano*

### T02-1 Atlases – Theory and Principles

Room: Innovation Hall (Miraikan)

Datetime: Tue 16th July 8:30-10:20

Chair: *Francis Harvey* (Leibniz-Institute for Regional Geography)

T02-1-1 **National atlases - an atlas type reconsidered**  
*Eric H Losang*

T02-1-2 **Atlases and Systems Theory within Systematic Cartography**  
*Vit Vozenilek*

T02-1-3 **3D Carto-Graphics – Principles, Methods and Examples for Interactive Atlases**  
*René Sieber, Remo Eichenberger, Lorenz Hurni*

### T12-1 Location Based Services I

Room: Uranus (Miraikan)

Datetime: Tue 16th July 8:30-10:20

Chair: *Haosheng Huang* (University of Zurich)

T12-1-1 **Incorporating directional signs into indoor navigation systems**  
*Wangshu Wang, Haosheng Huang, Hao Lyu, Georg Gartner*

T12-1-2 **The development of a cognitive indoor route planning algorithm: which aspects to include?**  
*Nina Vanhaeren, Kristien Ooms, Philippe De Maeyer*

T12-1-3 **Linking perception to decision point complexity for adaptive indoor wayfinding support**  
*Laure De Cock, Kristien Ooms, Nico Van De Weghe, Philippe De Maeyer*

T12-1-4 **Positioning Locality Based on Cognitive Directions and Context in Indoor Landmark Reference System**  
*Yankun Wang, Weixi Wang, Xiaoming Li, Shengjun Tang, You Li*

### T25-1 Ubiquitous Mapping

Room: Mars (Miraikan)

Datetime: Tue 16th July 8:30-10:20

Chair: *Masatoshi Arikawa* (Akita University)

T25-1-1 **Intergenerational differences in the use of maps: results from an online survey**  
*Yoshiki Wakabayashi*

T25-1-2 **Visual-Inertial Odometer-Based Global High Precision Indoor Human Navigation in a University Library**  
*Akinori Takahashi, Shinpei Ito, Masatoshi Arikawa, Ruo Chen Si*

T25-1-3 **Virtual Circular Geofences for Points and Regions of Interests with Spatial Context**  
*Masatoshi Arikawa, Hoshito Tokita, Ruo Chen Si, Ren Sato, Ryodai Tayama, Akinori Takahashi*

### T36-1 The transition to contemporary mappings

Room: Conference Room 1 (Plaza Heisei)

Datetime: Tue 16th July 9:20-10:20

Chair: *Kam Wing Fung* (The University of Hong Kong)

T36-1-1 **The gradual reinforcement of Japanese mapping in pre-colonial Taiwan and Korea**  
*Shigeru Kobayashi*

T36-1-2 **Development and Publication of Volcanic Base Map Data**  
*Gen Nagano, Hironobu Tsuchihashi, Katsuhiro Okamoto, Yoshinori Numata*

T36-1-3 **Mapping time-distance**  
*Feng Qi, Seth Docherty*

## **T01-2 Journey as Method**

Room: Saturn (Miraikan)

Datetime: Tue 16th July 10:50-12:10

Chair: *Cristina M. Iosifescu Enescu* (ETH Zurich, Switzerland)

**T01-2-1 "A journey as a flow": A personal spatio-temporal projection of the world.**

*Aleksandra Stanczak, Antoni Moore*

**T01-2-2 Drawing North America by Hand**

*Anton Thomas*

**T01-2-3 Maps of Literary Trails in Thessaloniki**

*Alexandra Koussoulakou, Yiannis Mitzias, Konstantinos Ntovas, Symeon Simeonidis, Michail Bakoyannis*

**T01-2-4 Borderknots – cartographing experiences of crossing borders**

*Katrin Gattinger*

## **T02-2 Atlases – Processes and Tools**

Room: Innovation Hall (Miraikan)

Datetime: Tue 16th July 10:50-12:10

Chair: *Eric Losang* (Leibniz-Institute for Regional Geography)

**T02-2-1 The automation of processes of atlas mapping**

*Sergey Anatolyevich Krylov, Gleb Igorevich Zagrebin, Anton Viktorovich Dvornikov, Dmitriy Sergeyeovich Loginov, Ivan Evgenyevich Fokin*

**T02-2-2 Graphical modeling with the chorematic method. A case study on Saudi Arabia.**

*Mohsen Dhieb*

**T02-2-3 Extending Exploration and Navigation Capabilities of the Atlas of Switzerland**

*Michael Schmuki, René Sieber, Lorenz Hurni*

**T02-2-4 Maps under the global condition: a new tool to study the evolution of cartographic language**

*Pierre Cherrier, Sebastian Lentz, Jana Moser, Laura Pflug*

## **T04-1 Cartography and Children 1**

Room: Mars (Miraikan)

Datetime: Tue 16th July 10:50-12:10

Chair: *CARLA CRISTINA SENA* (UNESP)

**T04-1-1 Teaching basic map concepts in three countries: Azerbaijan, Hungary and United Arab Emirates**

*José Jesús Reyes Nunez, Naeema Al Hosani, Nargiz Safaraliyeva*

**T04-1-2 Spatial Thinking in Children's Education: The relationship between Geography and Cartography**

*Paula Strina Juliasz, Sonia Vanzella Castellar*

**T04-1-3 Initiative aiming to introduce children to maps in Kenya**

*Catherine Mugure Njore, Bartholomew Kuria Thiong'O, Charles Mwangi Kimari*

**T04-1-4 School Atlas with Augmented Reality**

*Nikola Petrov Yonov*

## **T05-1 Cartography in Early Warning and Crisis Management 1**

Room: Venus (Miraikan)

Datetime: Tue 16th July 10:50-12:10

Chair: *TBD* (TBD)

**T05-1-1 Using GIS and cartography as part of the whole-of-society approach to determine coercion into marine wildlife poaching and piracy.**

*Peter Schmitz, Duarte Gonçalves*

**T05-1-2 Role of geospatial information for disaster risk management as exemplified in recent large earthquakes in Japan**

*Hiroshi Une, Takayuki Nakano*

**T05-1-3 Evaluating earthquake-related ground failure mapping by combined traditional and modern methods**

*Takayuki Nakano, Hiroshi Une, Kazuki Yoshida, Satoshi Fujiwara, Tomokazu Kobayashi*

**T05-1-4 The Integrated Disaster Reduction Intelligent Service System and its Application**

*Jiping Liu, Jiping Liu, Yong Wang, Mengmeng Liu, Shenghua Xu, Tao Jiang, Yang Gu*

## **T06-1 Cartography in the Mind**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Tue 16th July 10:50-12:10

Chair: *Sara Irina Fabrikant* (University of Zürich)

**T06-1-1 Representations of Place in the Human Brain**

*Amy Lobben, Megan McNally Lawrence, P. William Limpisathian*

**T06-1-2 Using fMRI to Explore the Influence of Road Network Patterns on Geospatial Cognition**

*Bing Liu, Weihua Dong, Lin Zhu, Huiping Liu, Liqiu Meng*

**T06-1-3 Using Spatial Image Schemata in the characterization of spatial relations**

*Maria Engracinda Dos Santos Ferreira, Luciene Stamato Delazari*

**T06-1-4 Our global-scale cognitive map: is it influenced by our place of residence or education?**

*Lieselot Lapon, Kristien Ooms, Philippe De Maeyer*

## **T12-2 Location Based Services II**

Room: Uranus (Miraikan)

Datetime: Tue 16th July 10:50-12:10

Chair: *Georg Gartner* (TU Wien)

### **T12-2-1 Location Based Services: Research Trends and Open Challenges**

*Haosheng Huang, Georg Gartner, Jukka Krisp, Martin Raubal, Nico Van De Weghe*

### **T12-2-2 Trajectory-based POI recommendations for mobile maps**

*Shane Loeffler*

### **T12-2-3 Collecting reliable training data to extract tourism strolling behaviour from smartphone GPS logs during walking**

*Hisatoshi Ai, Hideki Kaji*

### **T12-2-4 Classifying complex road features in the context of car driver education**

*Jukka M. Krisp, Andreas Keler*

## **T24-1 General approaches**

Room: Mercury (Miraikan)

Datetime: Tue 16th July 10:50-12:10

Chair: *Peter Jordan* (Austrian Academy of Sciences)

### **T24-1-1 Cartographers and geographers as toponym users, creators, and promoters. A linguistic perspective on cartographic and textual dissemination of geographical names**

*Wojciech Włoskiewicz*

### **T24-1-2 On the SCJ report "Challenges for the national standardisation of geographical names in Japan"**

*Kohei Watanabe, Kohei Okamoto, Akihiko Takagi, Takashi Morita, Shigeko Haruyama, Yoshiyasu Ida, Yumiko Takizawa, Hiroshi Tanabe, Takashi Todokoro, Yoshiki Wakabayashi*

### **T24-1-3 From Spatial to Platial Information Systems: For a Better Representation of the Sense of Place**

*Yaïves Ferland, Mir Abolfazl Mostafavi*

## **T32b-1 Urbanization and urban shrinkage**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Tue 16th July 10:50-12:10

Chair: *Tomoko Kubo* (University of Tsukuba)

### **T32b-1-1 Urban cartography in the morphogenetic analysis of urban spaces: the case of the Boavista axis in the city of Porto**

*Mário Gonçalves Fernandes, Rui Passos Mealha*

### **T32b-1-2 Housing challenges in shrinking and aging Japanese cities**

*Tomoko Kubo*

### **T32b-1-3 Housing issue in shrinking Russian cities: mapping the reality**

*Elena Batunova, Maria Gunko*

## **T36-2 The transition to modern mappings**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Tue 16th July 10:50-12:10

Chair: *Shigeru Kobayashi* (Osaka University)

### **T36-2-1 Aerial Surveys and Geographic Information in Modern China**

*Hajime Yamamoto*

### **T36-2-2 Mapping Reality and Virtuality: Paintings, Maps and Hydrographical Surveying about British and American Settlements of the Shanghai Bund, 1845-1860**

*Kam Wing Fung*

### **T36-2-3 Landscape-style Maps in Traditional Chinese Local Government**

*Akihiro Osawa*

### **T36-2-4 The changing use-cases of medium and large-scale geological maps in Hungary**

*Gáspár Albert*

## **T01-3 Mapping the Ephemeral**

Room: Saturn (Miraikan)

Datetime: Tue 16th July 14:50-16:10

Chair: *Nick Lally* (University of Kentucky)

### **T01-3-1 Cartographic Tools for Mapping Dreams**

*Cristina M. Iosifescu Enescu, Lorenz Huml*

### **T01-3-2 Sounding out Place and Cultural Memory in Tempelhofer: Human Scale**

*Elina Lex*

### **T01-3-3 Points Further North: An Acoustemological Cartography of Non-Place**

*Michael Klaus Trommer, Graham Wakefield*

### **T01-3-4 Mapping Perception of Place through Emotion, Memory, Senses, and the Imaginary**

*Joanna Gardener, William Cartwright, Lesley Duxbury, Amy Griffin*

## **T02-3 National atlases**

Room: Innovation Hall (Miraikan)

Datetime: Tue 16th July 14:50-16:10

Chair: *Qingwen Qi* (National Atlases Editorial Office of China)

### **T02-3-1 The new national atlas of Hungary**

*Károly Kocsis, Zsombor Nemerényi, László Zentai, Gábor Gercsák*

### **T02-3-2 A new work of the National Atlas of Spain called Spain on Maps. A Geographic Synopsis has been published**

*Noelia Pérez, Andrés Arístegui, Pilar Sánchez-Ortiz, Alfredo Del Campo*

### **T02-3-3 Topic Selection and Structure in the National Atlas of Switzerland**

*Raphael Vomsattel, René Sieber, Lorenz Humi*

### **T02-3-4 Creation of the National Atlas of the Arctic**

*Andrey Tatarenkov*

## **T04-2 Cartography and Children 2**

Room: Mars (Miraikan)

Datetime: Tue 16th July 14:50-16:10

Chair: *Yaïves Ferland* (Université Laval)

### **T04-2-1 Cartographical Knowledge and the training of Geography teachers**

*Carla Cristina Reinaldo Gimenes De Sena, Barbara Gomes Flaire Jordão, Sonia Maria Vanzella Castella*

### **T04-2-2 Liber chronicarum, Carta marina and other mappae mundi**

*Beata Fijolek-Soska*

### **T04-2-3 Geography education by the combination use of GIS and AR**

*Koji Ohnishi, Hiroaki Akimoto, Yoshihiro Ugawa, Satoru Itoh*

## **T05-2 Cartography in Early Warning and Crisis Management 2**

Room: Venus (Miraikan)

Datetime: Tue 16th July 14:50-16:10

Chair: *TBD* (TBD)

### **T05-2-1 Hazard-based images comparison methods for damage assessment in emergency mapping**

*Jean-François Girres*

### **T05-2-2 Mapping Violent Presence of Armed Actors in Colombia**

*Javier Osorio, Mohamed Mohamed, Viveca Pavon, Susan Brewer-Osorio*

### **T05-2-3 The Swiss joint information platform for natural hazards**

*Philipp Angehrn, Sabina Steiner, Christophe Lienert*

### **T05-2-4 Spatial Data modelling to study and improve waste management after hurricanes. The case of French West Indies**

*Anne Ruas, Serge Lhomme*

## **T06-2 Wayfinding with landmarks: from the world to the map**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Tue 16th July 14:50-16:10

Chair: *Petr Kubíček* (Masaryk University)

### **T06-2-1 The Influence of Spatial Familiarity on Landmark Salience Sensibility Based on Eye Tracking**

*Litao Zhu, Milan Konečný, Jie Shen, Zdeněk Stachoň, Hana Švedová*

### **T06-2-2 Experiment on People's Selection of Route Landmarks from Different Types of Geospatial Pictures**

*Pyry Kettunen*

### **T06-2-3 Influence of Viewing Field on Zoom Levels in Pedestrian Orientation Task Using Smartphones**

*Bonan Wei, Jochen Schiewe*

### **T06-2-4 Task-Oriented Display of Landmark Pictograms in Maps**

*Julian Keil, Dennis Edler, Lars Kuchinke, Frank Dickmann*

## **T09-1 GAM Research Agenda**

Room: Miraikan Hall (Miraikan)

Datetime: Tue 16th July 14:50-16:10

Chair: *X. Angela Yao* (University of Georgia)

### **T09-1-1 New Paradigm in Mapping: A Critique on Cartography and GIS**

*Bin Jiang*

### **T09-1-2 Is there a paradigm shift for GIS data representation and analysis?**

*Xiaobai Angela Yao*

### **T09-1-3 Methods for the Geographic Representation of Interpersonal Relationships and Social Life**

*Clio Andris, Dipto Sarkar*

### **T12-3 Location Based Services III**

Room: Uranus (Miraikan)

Datetime: Tue 16th July 14:50-16:10

Chair: *Jukka Krisp* (University of Augsburg)

**T12-3-1 The influence of user characteristics on spatial perception differences in 3D visual environments**

*Lina Huang, Yanfang Liu, Shen Ying*

**T12-3-2 Using Cartograms for Visualizing extended Floating Car Data (xFCD)**

*Christian Röger, Jukka M. Krisp*

**T12-3-3 Positioning Error in Mobile Phone Tracking Data with Consideration of Geographic Environment Factors**

*Xiaoqing Song, Yi Long, Ling Zhang*

**T12-3-4 Solution for indoor positioning using WIFI networks**

*Carolina Aguilar Aravena, Luciene Stamato Delazari*

### **T24-2 Place names and identity**

Room: Mercury (Miraikan)

Datetime: Tue 16th July 14:50-16:10

Chair: *Sungjae Choo* (Kyung Hee University Seoul)

**T24-2-1 Toponyms' contribution to identity: The case study of Rabat (Morocco)**

*Malak Alasli*

**T24-2-2 Memory and local Identity: the Persistence of Colonial-Era Street Names in Hong kong after 1997**

*Wenchuan Huang*

**T24-2-3 Mapping the core and periphery applied to a choronym (the case of Székely Land)**

*Zsombor Bartos-Elekes*

**T24-2-4 Unveil the "Lost Toponyms" in the Northern Part of the Menoreh Mountains, Java, Indonesia**

*Albina Apriadsa, Habib Sidiq Anggoro, Ari Cahyono, Rossaydiana Apriadna*

### **T32b-2 Behavior and landscape of cities**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Tue 16th July 14:50-16:10

Chair: *Jun Yamashita* (Kyushu University)

**T32b-2-1 Spatial Analysis of Tourist Spots in Central Tokyo Using Online Geotagged Photographs from Flickr**

*Bochra Bettaieb, Yoshiki Wakabayashi*

**T32b-2-2 Mapping foreign residents in Japan's major cities**

*Yoshitaka Ishikawa*

**T32b-2-3 Spatial-Temporal Landscape Analysis of Kallang-Seletar Transect, Singapore**

*Tao Wang*

### **T34/35-1 The frontier of crowdsourced geospatial information**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Tue 16th July 14:50-16:10

Chair: *Yuichiro Nishimura and Toshikazu Seto* (Nara Women's University and University of Tokyo)

**T34/35-1-1 Mobile Tools for Community Scientists**

*Maria Antonia Brovelli, Candan Eylul Kilsedar, Francesco Frassinelli*

**T34/35-1-2 Potential of crowdsourced data for integrating landmarks and routes for rescue in mountain areas**

*Marie-Dominique Van Damme, Ana-Maria Olteanu-Raimond, Yann Méneroux*

### **T01-4 Alternative Urban Cartographies**

Room: Saturn (Miraikan)

Datetime: Tue 16th July 16:40-18:00

Chair: *Joanna R Gardener* (Swinburne University of Technology and RMIT University)

**T01-4-1 "Buoyant Cartographies": Strata-Mapping the Detroit River Border**

*Taien Ng-Chan*

**T01-4-2 Mapping Heterotopia: Port B's Excavation of Asia in Tokyo**

*Sharon Hayashi*

**T01-4-3 To Characterize the Inscrutable City: A Practice of Alternative Mapping for Beirut**

*Lee Frederix*

## **T02-4 Historical Atlases**

Room: Innovation Hall (Miraikan)

Datetime: Tue 16th July 16:40-18:00

Chair: *Thomas Schulz* (Swiss Federal Statistical Office)

### **T02-4-1 Historic Atlases of Polish Towns - status at the end of 2018**

*Zenon Koziel, Radosław Golba, Agnieszka Pilarska, Roman Czaja*

### **T02-4-2 Unknown Unknowns in Map Preparation for Historical Atlases**

*Pavel Seemann, Tomas Janata*

### **T02-4-3 Creating a Digital Atlas of French Public Architecture (1795 – 1840)**

*Lena Krause*

## **T04-3 Cartography and Children 3**

Room: Mars (Miraikan)

Datetime: Tue 16th July 16:40-18:00

Chair: *José Jesús Reyes Nunez* (Eotvos Lorand University)

### **T04-3-1 The importance of History of Cartography in the Geography teaching**

*Carla Cristina Sena*

### **T04-3-2 Geoliteracy, Cartology, and a Mobile Serious Game**

*Yaïves Ferland, Margot Kaszap*

## **T05-3 Cartography in Early Warning and Crisis Management 3**

Room: Venus (Miraikan)

Datetime: Tue 16th July 16:40-18:00

Chair: *TBD* (TBD)

### **T05-3-1 Visualization of fire brigade interventions based on statistical data**

*Łukasz Wielebski*

### **T05-3-2 Online Hazard Maps, Risk Communication, Acceptance and Usage Continuance Intention Model: A Selected Review of Literature**

*Kartika Puspita Sari, Hidehiko Kanegae*

### **T05-3-3 Cartographies of Genocide**

*Alberto Giordano*

### **T05-3-4 Mapping refugee litters in the eastern coast of Lesvos using UAS, an emerging marine litter problem.**

*Apostolos Papakonstantinou, Konstantinos Topouzelis, Michaela Doukari, Olympos Andreadis*

## **T06-3 Maps, mountains and routing**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Tue 16th July 16:40-18:00

Chair: *Pyy Kettunen* (Finnish Geospatial Research Institute (FGI), National Land Survey of Finland)

### **T06-3-1 Deconstructing the relief inversion illusion: Contributors of the problem and its solutions**

*Arzu Coltekin, Gianna Hartung, Martina Meyer*

### **T06-3-2 Improving the search for victims in mountain with geovisualization and competing hypotheses management**

*Matthieu Viry, Marlène Villanova-Oliver, Jacques Gautier, Matthew Sreeves, Paule-Annick Davoine*

### **T06-3-3 Evaluation of Map Signs for Evacuation Purposes**

*Zdeněk Stachoň, Petr Kubicek, Hana Svedova, Jie Shen, Xinqian Wu, Milan Konecny*

### **T06-3-4 A framework for automatically visualizing and recommending efficient routes**

*Stefan Fuest, Monika Sester*

## **T09-2 Flood mapping and water system**

Room: Miraikan Hall (Miraikan)

Datetime: Tue 16th July 16:40-18:00

Chair: *Evgeny Panidi* (Saint Petersburg State University)

### **T09-2-1 A Mid-Axis extraction of heterogeneous river network data with topological consistency**

*Hai Hu, Lili Song, Zonglin Yin, Min Yang*

### **T09-2-2 A MULTI-CRITERIA DECISION SUPPORT SYSTEM IN THE ANALYSIS OF FLOOD RISK AND VULNERABILITY MAPPING IN SULEJA, NIGER STATE, NIGERIA**

*Halima Sadiya Abdullahi, Nura Khaliel Umar, Ado Usman Kibon*

### **T09-2-3 Modelling and Mapping Elusive Locations of Historic Water-Powered Grist Mills**

*Michael Edward Hodgson, Silvia Piovan*

## **T12-4 Location Based Services IV**

Room: Uranus (Miraikan)

Datetime: Tue 16th July 16:40-18:00

Chair: *Tinghua Ai* (Wuhan University)

**T12-4-1 Floating Car Data and Fuzzy Logic for classifying congestion indexes in the city of Shanghai**

*Maja Kalinic, Jukka M. Krisp*

**T12-4-2 Combining Location2Vec with LSTM to predict next locations from trajectory data**

*Shanshan Han, Fu Ren, Qingyun Du*

**T12-4-3 A Method for extracting multi-scale stay feature of trajectory based on OPTICS**

*Minshi Liu, Yi Long*

## **T24-3 Place names and map design**

Room: Mercury (Miraikan)

Datetime: Tue 16th July 16:40-18:00

Chair: *Cosimo Palagiano* (Sapienza University of Rome)

**T24-3-1 Fifty shades of Roboto: Text Design Choices and Categories in Multi-Scale Maps**

*Sébastien Biniek, Guillaume Touya, Gilles Rouffineau*

**T24-3-2 Multilingualization Experiment of Geographical Name Information Using Vector Tile Format**

*Masaki Suga, Koji Otsuka, Yoshikazu Honda*

**T24-3-3 Point Label Placement on Hexagonal Map Grids**

*Tinghua Ai, Yingzhe Lei*

**T24-3-4 Geographical names to support monitoring of the regional dynamic in Magelang, Central Java, Indonesia**

*Ari Cahyono, Rossaydiana Apriadna, Yuniarsita Setyo Wulandari, Siti Martha Uly Br Sinaga*

## **T32b-3 Urban governance, development, and mapping platform**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Tue 16th July 16:40-18:00

Chair: *Jun Tsutsumi* (University of Tsukuba)

**T32b-3-1 VGI contributors' awareness and practice on data quality: A case in Japan**

*Jun Yamashita, Toshikazu Seto, Yuichiro Nishimura, Nobusuke Iwasaki*

**T32b-3-2 Challenges in creating a 3D participatory platform for urban development**

*Thibaud Chassin, Jens Ingensand, Maryam Lottfian, Olivier Ertz, Florent Joerin*

**T32b-3-3 UFPR CampusMap: a laboratory for a Smart City developments**

*Luciene Stamato Delazari, Leonardo Ercolin Filho, Ana Luiza Stamato Delazari Skroch*

**T32b-3-4 Mapping Building Roof over Large Areas with Images of Public Available Map Services: Semantic Segmentation and Footprint Regularization**

*Yuchu Qin, Shuai Gao, Miao Liu*

## **T34/35-2 Geo for all: GIS education and volunteered geographic information**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Tue 16th July 16:40-18:00

Chair: *Nobusuke Iwasaki* (The National Agriculture and Food Research Organization)

**T34/35-2-1 A Climate Event Portal for Citizen Science**

*Andreas Divanis, Liqiu Meng*

**T34/35-2-2 Web Cartography going public: Developing a Massive Open Online Course (MOOC) for cartographic prosumers**

*Lorenz Hurni, Charalampos Gkonos, Hans Rudolf Baer*

## Wed 17th July

### T01-5 Constructions & Abstractions

Room: Saturn (Miraikan)

Datetime: Wed 17th July 8:30-10:20

Chair: *William Cartwright* (RMIT)

**T01-5-1 Geovisualizing space and time in a science-art exhibit**

*Javier A. Arce-Nazario*

**T01-5-2 Project “What connects us to the world?” : Constructions of artistic cartographic representations**

*Vânia L.C.A. Souza, Maria R.M. Matos*

**T01-5-3 Projecting emotions from artworks to maps using neural style transfer**

*Edyta Paulina Bogucka, Liqiu Meng*

**T01-5-4 Mapping dynamic, non-Euclidean spaces**

*Nick Lally, Luke Bergmann*

### T02-5 Educational and Ecological Atlases

Room: Innovation Hall (Miraikan)

Datetime: Wed 17th July 8:30-10:20

Chair: *Vit Vozenilek* (Palacký University Olomouc)

**T02-5-1 The Republic of Indonesia Territorial Atlas as Geoliteration Tools for the Adolescents**

*Fakhrudin Mustofa, Ellen Suryanegara, Niendyawati Niendyawati, Mulyanto Darmawan*

**T02-5-2 Swiss World Atlas in Class Room - How to teach with maps**

*Wenke Zimmermann, Lorenz Hurni*

**T02-5-3 Rethinking the Place of students intermediated by the Geographic, Historical and Cultural School Atlas of the Federal District, Brasilia, Brazil**

*Vânia L.C.A. Souza, Cristina M.C. Leite, Miriam A. Bueno*

**T02-5-4 Fauna on the maps of Russia and its Arctic Region**

*Tamara Vereshchaka, Olga Kulagina, A.L. Stepanchenko*

### T07-1 Educational resources

Room: Venus (Miraikan)

Datetime: Wed 17th July 8:30-10:20

Chair: *Laszlo Zentai* (Secretary-General & Treasurer ICA, Hungary)

**T07-1-1 Analysis of the representation of Sustainable Development Goals in textbook maps and atlases in educational contexts**

*Sandra Sprenger, Carina Peter*

**T07-1-2 Cartography. A book and a MOOC**

*Kenneth Field*

**T07-1-3 The Introduction Chapter of the Swiss World Atlas 2017 – An Innovative Cartographic Education Tool in Switzerland**

*Christian Haeberling, Katharina Henggeler, Lorenz Hurni*

### T09-3 Raster Data Analysis

Room: Miraikan Hall (Miraikan)

Datetime: Wed 17th July 8:30-10:20

Chair: *Rakesh Kumar* (International Institute for Population Sciences Mumbai)

**T09-3-1 Run length coding and efficient compression of hexagonal raster data based on Gosper curve**

*Rui Xin, Tinghua Ai*

**T09-3-2 Rural Road Extraction using Object Based Image Analysis (OBIA): A case study from Assam, India**

*Ankita Medhi, Ashis Kumar Saha*

**T09-3-3 A fast and simple algorithm for calculating flow accumulation matrices from raster digital elevation models**

*Guiyun Zhou, Wenyan Dong, Hongqiang Wei*

**T09-3-4 Validating the vertical quality of SRTM digital elevation model of the Mirim Lagoon hydrographic basin**

*Andrea Lopes Iescheck, Patricia Andréia Paiola Scalco*

### T13-1 Map Design I: Perception and Cognition

Room: Uranus (Miraikan)

Datetime: Wed 17th July 8:30-10:20

Chair: *Kenneth Field* (Esri Inc)

**T13-1-1 Design, Dissemination, and Disinformation in Viral Maps**

*Anthony C Robinson*

**T13-1-2 Emotion maps**

*William Edward Cartwright*

**T13-1-3 User Preferences for Bus Map Design: Evidence from a Map Usability Study**

*Mohd Shahmy Mohd Said, David Forrest*



## **T18-1 Relief representations**

Room: Mars (Miraikan)

Datetime: Wed 17th July 8:30-10:20

Chair: *Karel Kriz* (University of Vienna)

### **T18-1-1 Standard Elevation Models for Evaluating Terrain Representation**

*Patrick Kennelly, Tom Patterson, Alexander Tait, Bernhard Jenny, Daniel Huffman, Sarah Bell, Brooke Marston*

### **T18-1-2 Analysis of Relief Shading Tools and Methods for Terrain Representation**

*Marianna Farmakis-Serebryakova, Lorenz Hurni*

### **T18-1-3 Contour Lines Generation in Karstic Plateaus for Topographic Maps**

*Guillaume Touya, Hugo Boulze, Anouk Schleich, Hervé Quinquenel*

### **T18-1-4 Visualizations of the Doblar Accumulation Basin Based on the UAV Survey**

*Klemen Kozmus Trajkovski, Gašper Štebe, Dušan Petrovič*

## **T19-1 Open source geotechnologies in Cartography**

Room: Mercury (Miraikan)

Datetime: Wed 17th July 8:30-10:20

Chair: *Claudia Robbi Sluter* (Federal University of Rio Grande do Sul - UFRGS (Brazil))

### **T19-1-1 The advancement of utilizing geospatial information via GSI Maps**

*Hirosato Mogi*

### **T19-1-2 GIS Maps as Powerful Curriculum Artefacts**

*Mary Fargher*

### **T19-1-3 Historical map viewer technology that guarantees nonlinear bijective conversion without distortion**

*Kohei Otsuka*

### **T19-1-4 Reproducible Workflow for Cartography - Migrants Deaths in the Mediterranean sea**

*Timothée Giraud, Nicolas Lambert*

## **T26-1 User Issues in Representation Design I**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Wed 17th July 9:20-10:20

Chair: *Robert Roth* (University of Wisconsin)

### **T26-1-1 How does the enumeration unit size influence spatial pattern recognition in choropleth maps? User study**

*Izabela Karsznia*

### **T26-1-2 Choropleth map - which data type should I use?**

*Tomasz Nowacki*

## **T42-1 Geospatial web data**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Wed 17th July 9:20-10:20

Chair: *Hideyuki Fujita* (The University of Electro-Communications)

### **T42-1-1 Research on Deep Web POI Acquisition based on Retrieving Word Optimization and Spatial Adaptive**

*Yong Wang, Yong Wang, Jiping Liu, An Luo, Yuanhui Cao*

### **T42-1-2 Analysis of Tourists' Image of Seoul with Geotagged Photos using Convolutional Neural Networks**

*Dongeun Kim, Youngok Kang, Yearim Park, Nayeon Kim, Juyoon Lee, Nahye Cho*

### **T42-1-3 Semantic trajectory inference from geo-tagged tweets**

*Qunying Huang, Xinyi Liu*

## **T02-6 Statistical and Political Atlases**

Room: Innovation Hall (Miraikan)

Datetime: Wed 17th July 10:50-12:10

Chair: *René Sieber* (ETH Zurich, Switzerland)

### **T02-6-1 Digital Thematic Mapping Based on Classical Geopolitical Theory**

*Bertil Häggman*

### **T02-6-2 Statistical Atlas of Poland and statistical atlases of voivodships**

*Maciej Zych, Katarzyna Medolińska*

### **T02-6-3 Retro-atlases II: a new edition of the first Statistical Atlas of Switzerland (1897)**

*Olaf König*

## **T07-2 Cartographic topics for wider audiences**

Room: Venus (Miraikan)

Datetime: Wed 17th July 10:50-12:10

Chair: *Gertrud Schaab* (Deputy Dean for Research, Karlsruhe University of Applied Research, Germany)

### **T07-2-1 Geospatial Literacy in Africa-Nigeria**

*Raimi Abidemi Asiyabola*

### **T07-2-2 Digital sketch maps in teaching GIS for law enforcement students**

*Andrea Pödör, László Zentai, Erika Gál*

### **T07-2-3 Orienteering in Geography Education in Japanese High School**

*Takeo Kobayashi*

### **T07-2-4 Challenges for First Time GIS User among Student Teachers**

*Mengieng Ung*

## **T09-4 Network Analysis (I)**

Room: Miraikan Hall (Miraikan)

Datetime: Wed 17th July 10:50-12:10

Chair: *Bin Jiang* (University of Gävle)

### **T09-4-1 Understanding the integration of buses and metro systems using smart card data**

*Diao Lin, Ruoxin Zhu*

### **T09-4-2 Uncovering Community Structure in Geospatial Networks: A Case Study of Urban Bus Networks in Hangzhou, China**

*Yujing Wang, Fu Ren, Qingyun Du*

### **T09-4-3 Shadow analysis of buildings over urban express way by using three-dimensional GIS - To study the distribution of long remained snow cover that made express way close for five days**

*Daichi Shiroki, Hiroshi Masaharu*

### **T09-4-4 FINDING AN ALTERNATE ACCESS ROUTE FROM IKIRE TO GBONGAN USING GEOSPATIAL TECHNIQUES**

*Nureni Babatunde Amoo*

## **T13-2 Map Design II: Flows and Schematics**

Room: Uranus (Miraikan)

Datetime: Wed 17th July 10:50-12:10

Chair: *Ian Muehlenhaus* (University of Wisconsin-Madison)

### **T13-2-1 Methods and tools for automated production of origin-destination flow maps**

*Daniel M Stephen, Bernhard Jenny*

### **T13-2-2 A comparative analysis of visualization methods of travel time for schematic road map**

*Xiaotong Hou, Peng Ti*

### **T13-2-3 Cargo flow maps: design principles and automated generation**

*Timofey Samsonov, Platon Yasev*

### **T13-2-4 Another new design for an old map**

*Kenneth Field, William Cartwright*

## **T18-2 Mapping mountain and outdoor activities**

Room: Mars (Miraikan)

Datetime: Wed 17th July 10:50-12:10

Chair: *Dušan Petrovič* (University of Ljubljana)

### **T18-2-1 ALBINA The White Goddess – Mapping and Communicating Avalanche Risk in the European Alps**

*Karel Kriz*

### **T18-2-2 Proposals for enhancements of topographic maps for high alpine tours**

*Stephan Wondrak*

### **T18-2-3 Cross-border topographic mapping, cross-border orienteering: the Hungarian overview**

*László Zentai, Gábor Gercsák*

## **T26-2 User Issues in Representation Design II**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Wed 17th July 10:50-12:10

Chair: *Zdenek Stachon* (Masaryk University)

### **T26-2-1 Evaluating rainbow colour scheme in social data mapping**

*Izabela Golebiowska*

### **T26-2-2 How colour palettes in maps are re-coloured by daltonization methods**

*Anne Kristin Kvitle*

### **T26-2-3 Numbers on maps as a new cartographic technique: helpful or harmful for users? An empirical study**

*Jolanta Korycka-Skorupa*

### **T26-2-4 The Specifics of Cartographic Semiology in Tactile Maps**

*Alena Vondrakova, Radek Barvir, Jan Brus*

## **T30-1 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (1)**

Room: Saturn (Miraikan)

Datetime: Wed 17th July 10:50-12:10

Chair: *Takashi Oguchi and Tzai-Hung Wen* (Univ. Tokyo, Japan, National Taiwan Univ.)

### **T30-1-1 Extraction of knowledge on spatial distribution and spatial relationship from scanned topographic map using Convolutional Neural Networks**

*Hao Wu, Hongguo Jia*

### **T30-1-2 Displacement and visualization of point symbols based on spatial distribution characteristics**

*Haipeng Liu, Yi Long, Yi Zheng*

### **T30-1-3 Third dimension of a map**

*Karel Jedlička*

### **T30-1-4 Image Spectrometry and Copernicus data for Heritage Mapping in the Jarama Valley, Spain**

*Juan Gregorio Rejas, Francisco Javier Gonzalez, Pilar Sanchez-Ortiz*

## **T31-1 Visualization and Analysis of Geographical Process (1)**

Room: Mercury (Miraikan)

Datetime: Wed 17th July 10:50-12:10

Chair: *Koichi Tanaka* (Ibaraki University)

### **T31-1-1 Time-space Visualization of Automobile and Airplane Travel Time from Chicago to Various Destination Cities**

*Stella W. Todd, Alex Yetsko, Claire Hay*

### **T31-1-2 An Analysis of Movement by Visualizing Spatio-Temporal Characteristics of Logdata**

*Nahye Cho, Youngok Kang*

## **T34/35-3 Analysis of OpenStreetMap contribution and data trustworthiness**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Wed 17th July 10:50-12:10

Chair: *Maria Antonia Brovelli* (Politecnico di Milano)

### **T34/35-3-1 Temporal-spatial Analysis of Contributors' Mapping Behavior for Building Data in OpenStreetMap**

*Jin Xu, Qi Zhou*

### **T34/35-3-2 Spatial-temporal Evolution and Completeness Analysis of OpenStreetMap Building Data in China from 2012 to 2017**

*Qi Zhou, Yuanjian Tian*

### **T34/35-3-3 Pedestrian Traffic Flow Prediction based on ANN Model and OSM data**

*Achituv Cohen, Sagi Dalyot*

### **T34/35-3-4 Integrating spatial accessibility estimates derived from crowdsourced, commercial, and authoritative geo-datasets: Case study of mapping accessibility to urban green space in the Tokyo-Yokohama area**

*Brian Alan Johnson, Rajarshi Dasgupta, Shizuka Hashimoto, Pankaj Kumar, Akio Onishi*

## **T42-2 Designing data driven maps**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Wed 17th July 10:50-12:10

Chair: *TBD* (TBD)

### **T42-2-1 Designing maps with fictional and real road intersections for the evaluation of countdown timer displays for bicyclists**

*Andreas Keler, Georgios Grigoropoulos, Heather Kathis, Klaus Krämer, Jakob Kathis, Matthias Spangler, Fritz Busch*

### **T42-2-2 Enriching complex road intersections from OSM with traffic-related behavioral information**

*Andreas Keler, Georgios Grigoropoulos, Dominik Mussack*

### **T42-2-3 Automatic Generation of Photorealistic Image Fillers for Privacy Enabled Urban Basemaps using Generative Adversarial Networks**

*Amgad Agoub, Yevgeniya Filippovska, Valentina Schmidt, Martin Kada*

### **T42-2-4 Innovative Geospatial and Cartographic Approaches to Identification, Analysis, and Visualisation of Land Degradation**

*Tomas Reznik, Milan Konecny, Karel Charvat*

## **T06-4 Map design, emotions and decision-making**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Wed 17th July 14:50-16:10

Chair: *Amy Griffin* (RMIT University)

### **T06-4-1 The significance of shape in cartographic communication**

*Silvia Klettner*

### **T06-4-2 Effects of valence on selecting and memorizing spatial information from road maps**

*Andrea Binn*

### **T06-4-3 Emotional responses to climate change map framing using facial emotion recognition technology**

*Carolyn S Fish, Amy L Griffin*

### **T06-4-4 How are map-based decisions influenced by uncertainty visualization in risky and time-critical situations?**

*Michelle Korporaal, Sara Irina Fabrikant*

### **T07-3 Educational concepts**

Room: Venus (Miraikan)

Datetime: Wed 17th July 14:50-16:10

Chair: *William Cartwright* (Professor of Cartography, RMIT University, Australia)

#### **T07-3-1 Strategies for teaching cartography from theory and practice**

*Jeff T Howarth*

#### **T07-3-2 Contemporary challenges in cartographic education**

*David Fairbairn*

#### **T07-3-3 Envisioning the future of academic cartographic education**

*Georg Gartner, Menno-Jan Kraak, Dirk Burghardt, Liqiu Meng, Juliane Cron, Corne Van Elzakker, Britta Ricker*

#### **T07-3-4 ANALYTICAL BACKGROUND FOR DEVELOPING A BODY OF KNOWLEDGE FOR CARTOGRAPHY**

*Harold Moellering*

### **T09-5 Network Analysis (II)**

Room: Miraikan Hall (Miraikan)

Datetime: Wed 17th July 14:50-16:10

Chair: *X. Angela Yao* (University of Georgia)

#### **T09-5-1 MODELING AND ANALYSIS OF SEMANTICALLY ENRICHED SIMPLIFIED TRAJECTORIES USING GRAPH DATABASES**

*Rajesh Tamilmani, Emmanuel Stefanakis*

#### **T09-5-2 Data Cleansing Method for Sparse Trajectory Data: A Case Study of Shared Electric Bicycles in Tenzhou**

*Zhaoxin Dai, Weixiang Peng, Chengcheng Zhang*

#### **T09-5-3 Analysis on the Riding Characteristics of Mobike Sharing Bicycle in Beijing City, China**

*Min Cao, Mengxue Huang*

#### **T09-5-4 An Improved Algorithms of Stroke Generation Considering Multi-level Information Quantity**

*Liu Yi, Li Wen Jing, Lin Zhi Yong*

### **T13-3 Map Design III: Thematics**

Room: Uranus (Miraikan)

Datetime: Wed 17th July 14:50-16:10

Chair: *Ian Muehlenhaus* (University of Wisconsin-Madison)

#### **T13-3-1 Image of Excellence – Developing Wine Maps for Austria**

*Karel Kriz*

#### **T13-3-2 Thematic Mapping: This Is My Truth Tell Me Yours**

*Kenneth Field*

#### **T13-3-3 Central Park Squirrel Census Maps**

*Nathaniel Garnett Slaughter Iv*

### **T23-1 New Approaches in Topographic Mapping**

Room: Mars (Miraikan)

Datetime: Wed 17th July 14:50-16:10

Chair: *Alexander Kent* (Canterbury Christ Church University)

#### **T23-1-1 Towards sustainable topographic mapping**

*Haico Van Der Vegt, Paula Dijkstra, Ton Van Helvert*

#### **T23-1-2 Cartographic support of design, construction and operation of underground gas storage in rock salt**

*Tamara Vereshchaka, Marina Bakanova, A.L. Stepanchenko*

#### **T23-1-3 Digital processing of old topographical maps for the reference base for quantitative and qualitative studies of landscape changes**

*Dariusz Lorek, Beata Medynska-Gulij, Paweł Cybulski, Tymoteusz Horbiński*

#### **T23-1-4 DEM based Terrain Sketch Mapping in a Loess Landform By Considering visual hierarchy and feature generalization**

*Cheng Yi Han*

### **T30-2 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (2)**

Room: Saturn (Miraikan)

Datetime: Wed 17th July 14:50-16:10

Chair: *Takashi Oguchi and Tzai-Hung Wen* (Univ. Tokyo, Japan, National Taiwan Univ.)

#### **T30-2-1 3D Map Visualization Process and Efficiency Analysis of Geographic Information Based on WebGL**

*Deguo Su, Beibei Tan, Debao Yuan, Yong Wang*

#### **T30-2-2 Semantically Enriched Simplification of Trajectories**

*Rajesh Tamilmani, Emmanuel Stefanakis*

#### **T30-2-3 Improvements to Information Entropy for Raster Spatial Data: A Thermodynamic-based Evaluation**

*Hong Zhang, Peichao Gao, Zhilin Li*

#### **T30-2-4 Boltzmann Entropy for the Spatial Information of Raster Data**

*Peichao Gao, Hong Zhang, Zhilin Li*

## **T31-2 Visualization and Analysis of Geographical Process (2)**

Room: Mercury (Miraikan)

Datetime: Wed 17th July 14:50-16:10

Chair: *Hao Hou* (Hangzhou Normal University)

### **T31-2-1 The Spatial Relationship between Land Surface Temperature and Land Use/Cover Types in Sapporo City, Japan**

*Ruci Wang, Yuji Murayama*

### **T31-2-2 Evaluating Bi-temporal Dynamics and Trend of Urbanization-induced Land Cover Temperature in Shanghai, China**

*Fei Liu, Yuji Murayama*

### **T31-2-3 Geographical Change of the Japanese National Land in the 200 Years Using INŌ's Map with GIS**

*Yuji Murayama, Yuki Iwai*

## **T34/35-4 Geomedia studies using volunteered geographic information**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Wed 17th July 14:50-16:10

Chair: *Holger Jens Kumke* (Technical University Munich)

### **T34/35-4-1 Linking picture with text: tagging flood relevant tweets for rapid flood inundation mapping**

*Xiao Huang, Cuizhen Wang, Zhenlong Li*

### **T34/35-4-2 Social Media for Sensing: Do Tweets Represent Events at Geo-Tagged Locations?**

*Morteza Karimzadeh*

### **T34/35-4-3 Finding cultural heritage traces from modern social media**

*Francisco Porras Bernardes, Georg Gartner, Nico Van De Weghe, Steven Verstockt*

## **T39-1 Theoretical Cartography 1**

Room: Innovation Hall (Miraikan)

Datetime: Wed 17th July 14:50-16:10

Chair: *Georg Gartner* (Technical University Vienna)

### **T39-1-1 Functional Cartography – About the quality of maps from the era of artefacts to the era of services and beyond**

*Georg Gartner*

### **T39-1-2 Mapping in Cartography**

*Miljenko Lapaine*

### **T39-1-3 From third-person to first-person cartographies with immersive virtual environments**

*Florian Hruby*

## **T42-3 Sensing and data analysis**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Wed 17th July 14:50-16:10

Chair: *TBD* (TBD)

### **T42-3-1 Analysis of Travel Patterns of Seoul Tourists by Trajectory Data Mining**

*Juyoon Lee, Youngok Kang, Nayeon Kim, Dongeun Kim, Yearim Park*

### **T42-3-2 Air pollution potential hot zone evaluation model based on environmental sensing IoT**

*Chi-Chieh Peng, Tzai-Hung Wen*

### **T42-3-3 Exploring Urban Dynamics from Bluetooth Tracking Data: A Case Study of Austin, Texas**

*Yihong Yuan, David Mills*

### **T42-3-4 Extraction of Newly-built Roads Using Probe Data**

*Shuto Sugai, Sho Takahashi, Mayumi Noguchi, Akira Sasagawa*

## **T06-5 Optimizing map design for end users**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Wed 17th July 16:40-18:00

Chair: *Sidonie Christophe* (Institut Nationale Geographique)

### **T06-5-1 Creating and evaluating web-based visualizations of multi-dimensional spatiotemporal data**

*Jan Wilkening, Keni Han, Mathias Jahnke*

### **T06-5-2 Coincident Visualization of Uncertainty and Value for Point Symbols**

*Petr Kubíček, Milan Konečný, Jie Shen, Zdeněk Stachoň, Xinqian Wu*

### **T06-5-3 Grid overlays reduce bias in mental representations of topographic maps**

*Lars Kuchinke, Julian Keil, Dennis Edler, Anne-Kathrin Bestgen, Frank Dickmann*

### **T06-5-4 Using Area Cartograms in Teaching Geography in Secondary Schools**

*Anna Markowska*

#### **T07-4 Cartographic education supporting specific activities**

Room: Venus (Miraikan)

Datetime: Wed 17th July 16:40-18:00

Chair: *Tao Wang* (Associate Dean for Education and International Affairs, Capital Normal University, Beijing, China)

##### **T07-4-1 Educational resources of Cartography and Geography in the IGN of Spain**

*Ana Velasco-Tirado, Celia Sevilla-Sánchez*

##### **T07-4-2 NOAA's Certification program in Marine Cartography**

*Shachak Peeri, John Nyberg, Neil Weston*

##### **T07-4-3 International Cartography Master graduates starting their career**

*Juliane Cron, Liqiu Meng, Edyta Bogucka, Georg Gartner, Dirk Burghardt, Menno-Jan Kraak, Corné Van Elzakker, Britta Ricker*

#### **T09-6 Analysis and modeling of air quality**

Room: Miraikan Hall (Miraikan)

Datetime: Wed 17th July 16:40-18:00

Chair: *Lei Zou* (Texas A&M University)

##### **T09-6-1 Data-driven regionalization for analyzing the spatiotemporal characteristic of air quality in China**

*Sheng Li, Jiangtao Liu, Chao Wu*

##### **T09-6-2 Extracting relationship between air pollution and precipitation using spatio-temporal analysis in Tehran metropolis**

*Shokouh Dareshiri, Mohammadreza Sahelgozin, Maryam Lotfian, Jens Ingensand*

#### **T13-4 Map Design IV: Content**

Room: Uranus (Miraikan)

Datetime: Wed 17th July 16:40-18:00

Chair: *Kenneth Field* (Esri Inc)

##### **T13-4-1 Banal Cartography: A Critique of Quantitative Content Analysis in Contemporary Cartographic Research**

*Ian Muehlenhaus*

##### **T13-4-2 Ten Telltale Signs of Novice Cartography**

*Aileen R. Buckley*

##### **T13-4-3 Quantifying Emotion: Survey Methods and Sentiment Analysis in Cartographic Design Research**

*Cary Leonard Anderson*

#### **T23-2 Topographic Mapping of Urban Environments**

Room: Mars (Miraikan)

Datetime: Wed 17th July 16:40-18:00

Chair: *Anja Hopfstock* (Federal Agency for Geodesy and Cartography)

##### **T23-2-1 Analysing the Symbolology of Soviet Military City Plans**

*Martin Davis, Alexander J Kent*

##### **T23-2-2 The Soviet Military Plan of Tokyo (1966)**

*Alexander James Kent*

##### **T23-2-3 A proposal of topographic map symbols for large-scale maps of urban areas in Brazil**

*Claudia Robbi Sluter, Silvana Philippi Camboim, Andrea Lopes Iescheck, Luciane Borges Pereira*

##### **T23-2-4 Measuring user preferences in virtual reality (VR): 2D versus 3D urban geovisualizations of topographic data**

*Lukasz Halik, Alexander James Kent*

#### **T30-3 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (3)**

Room: Saturn (Miraikan)

Datetime: Wed 17th July 16:40-18:00

Chair: *Tzai-Hung Wen and Takashi Oguchi* (National Taiwan Univ., Univ. Tokyo, Japan)

##### **T30-3-1 Automatic Change Detection Based on Edge Information Using Two Different Types of Ortho Image**

*Akira Sasagawa, Shuto Sugai, Mayumi Noguchi*

##### **T30-3-2 A novel spatial recurrent neural network for hyperspectral imagery classification**

*Andong Ma, Anthony M. Filippi*

##### **T30-3-3 Application of Method for Calculating Sky View Factor Using Google Street View: Relation Between Sky View Factor and Physical Elements in Urban Space**

*Shoko Nishio, Fumiko Ito*

##### **T30-3-4 Practice of a GIS education program for junior and senior high school students**

*Hiroyuki Yamauchi, Takashi Oguchi, Yasutaka Haneda*

### **T31-3 Visualization and Analysis of Geographical Process (3)**

Room: Mercury (Miraikan)

Datetime: Wed 17th July 16:40-18:00

Chair: *TBD* (National Institute of Environmental Studies)

#### **T31-3-1 Spatial Analysis of Urbanization in Major Asian and African Cities**

*Manjula Ranagalage, Yuji Murayama*

#### **T31-3-2 The Impact of landscape composition for urban heat island intensity in Addis Ababa City using Landsat data (1986-2016)**

*Dmslb Dissanayake, Takehiro Morimoto, Yuji Murayama, Manjula Ranagalage*

#### **T31-3-3 Ground Disasters Visual Representation Based on Multi-Field Geospatial Infographics Spectra in Mining Area**

*Jin Zhang*

#### **T31-3-4 Multiscale assessment of northern forest characteristics based on ultra-high resolution data**

*Andrey A. Medvedev, Arseny V. Kudikov, Natalia O. Telnova, Olga V. Tutubalina, Elena I. Golubeva, Mihail V. Zimin*

### **T34/35-5 Development and practices of crowdsourced geospatial information**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Wed 17th July 16:40-18:00

Chair: *Toshikazu Seto* (The University of Tokyo)

#### **T34/35-5-1 Action, Emotion, Opinion – A Taxonomy of Human Reactions Expressed in Location-Based Social Media**

*Eva Hauthal, Dirk Burghardt*

#### **T34/35-5-2 Auto-filtering validation in citizen science biodiversity monitoring: a case study**

*Maryam Lotfian, Jens Ingensand, Olivier Ertz, Simon Oulevay, Thibaud Chassin*

#### **T34/35-5-3 Feedbacks on VGI in-situ campaign for updating LULC data**

*Laurence Jolivet, Ana-Maria Olteanu-Raimond, Marie-Dominique Van Damme, Marie Gombert, Simon Fauret, Thierry Saffroy*

#### **T34/35-5-4 The Development of Open Source Based Citizen Collaboration Applications for Infrastructure Management: My City Report**

*Toshikazu Seto, Yoshihide Sekimoto, Hiroshi Omata, Hiroya Maeda, Takehiro Kashiya, Shusaku Higashi, Masato Fujii, Haruyuki Seki*

### **T39-2 Theoretical Cartography 2**

Room: Innovation Hall (Miraikan)

Datetime: Wed 17th July 16:40-18:00

Chair: *Jim Thatcher* (University of Washington Tacoma)

#### **T39-2-1 Distance Matters: a more than euclidean approach to visualizing gerrymandering**

*Austin Jennings, Jim Thatcher*

#### **T39-2-2 A Choropleth Map Classification Scheme with Control of Robustness for Uncertain Geographical Attributes**

*Wangshu Mu, Daoqin Tong*

#### **T39-2-3 Automatic Geological Map Generalization for special geobody—A Case Study on Dyke**

*Wenjing Li, Siyi Li, Hongguo Jia*

### **T42-4 Geospatial big data visualization and Data science**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Wed 17th July 16:40-18:00

Chair: *Ryo Inoue* (Tohoku University)

#### **T42-4-1 Towards Spatial Data Science: Bridging the Gap between GIS, Cartography and Data Science**

*Jan Wilkening*

#### **T42-4-2 comprehensive workflow for automating thematic map geovisualization from univariate big geospatial point data**

*Larissa Pillay, Gertrud Schaab, Serena Coetzee, Victoria Rautenbach*

#### **T42-4-3 Advanced Cartographic Techniques for Making Sense of Big Dynamic Data**

*Alexandre Sorokine, Steven Fernandez*

#### **T42-4-4 Ethics of Location-Based Data in Crisis Situations**

*Alan M Maceachren*

## Thu 18th July

### T03-1 Cartographic Heritage 1: Georeferencing, Analysis

Room: Mars (Miraikan)

Datetime: Thu 18th July 8:30-10:20

Chair: *Angeliki Tsorlini* (Aristotle University of Thessaloniki)

**T03-1-1 Fast georeferencing/geocoding tool for old maps with large distortions**

*Mátyás Gede*

**T03-1-2 Research on Geographical Positioning of Ancient Map**

*Lili Jiang*

### T07-5 Cartographic topics for the classroom

Room: Venus (Miraikan)

Datetime: Thu 18th July 8:30-10:20

Chair: *David Fairbairn* (Chair, ICA Commission on Education & Training, UK)

**T07-5-1 Developing Interactive Map Apps for an Exhibition on the Topic 'Fremdsein': a Joint Endeavour by Students and Lecturers**

*Gertrud Schaab, Christian Stern, Jan Jedersberger, Agageldi Samedov*

**T07-5-2 A New Approach to Teaching C++ Programming for Cartography Students by Means Training Programs with Emphasizing Cartography and Geodesy**

*Vladimir Zablotskii*

**T07-5-3 Solar System Cartography for High School Education: A Dual Scale Approach**

*Stephan Wondrak*

**T07-5-4 "Demystifying Least Square Adjustments Using Smartphones and Graphic Calculator"**

*Roberto Magayanes Recamunda*

### T09-7 Health and emergency analysis

Room: Miraikan Hall (Miraikan)

Datetime: Thu 18th July 8:30-10:20

Chair: *Lois A Park* (University of Southern California)

**T09-7-1 Identifying Heat Health Risks in the Urban Areas of Western Australia (WA) – An Enhanced Heat Vulnerability Assessment**

*Qian Sun, Grace Yun, Ting Ling*

**T09-7-2 Subnational estimates of health in low- and middle-income countries: a geospatial approach with interpolation and raster analysis**

*Lois A Park*

**T09-7-3 An approach for identifying and analysing reference features and spatial relations used in mountain emergency calls**

*Mattia Bunel, Cécile Duchêne, Ana-Maria Olteanu-Raimond, Marlène Villanova-Olivier, Grégoire Bonhoure, Tiphaine Jouan*

### T13-5 Map Design V: Paths

Room: Uranus (Miraikan)

Datetime: Thu 18th July 8:30-10:20

Chair: *Ian Muehlenhaus* (University of Wisconsin-Madison)

**T13-5-1 Marathon Map and its Utilization in City Tourism**

*Xiaoyan Liu, Cheng Ye, Shuran Zhang*

**T13-5-2 Indoor path visualization method based on the spatial characteristics of indoor environment**

*Jiafeng Shi, Jie Shen, Zdeněk Stachoň, Yawei Chen*

### T21-1 Advances in SDI research

Room: Saturn (Miraikan)

Datetime: Thu 18th July 8:30-10:20

Chair: *Serena Coetzee* (University of Pretoria)

**T21-1-1 Harmonizing National Topographic Data Using an Automated Quality Validation Process**

*Nils Erik Mesterton, Mari Talvikki Isomäki, Antti Jakobsson, Joonas Jokela*

**T21-1-2 MODEL OF MANAGEMENT OF THE QUALITY OF THE GEOSPATIAL INFORMATION IN THE AEROPHOTOGRAMETRIC SERVICE OF THE AIR FORCE OF CHILE, BASED ON STANDARDS ISO TC/211**

*Joselyn Robledo Ceballos*

**T21-1-3 Collaborative Custodianship through Collaborative Cloud Mapping: Challenges and Opportunities**

*Serena Coetzee, Jacques Du Preez, Franz-Josef Behr, Antony K Cooper, Maritjn Odijk, Siegfried Vanlshout, Raf Buyle, Markus Jobst, Maroale Chauke, Nicolene Fourie, Peter Schmitz*

**T21-1-4 Expanding the ICA model of stakeholders in a spatial data infrastructure (SDI)**

*Antony Kyle Cooper, Serena Coetzee, Petr Rapant, Adam, Jan Hjelmager, Harold Moellering, Michel Huet, Kisco Sinvula*



## **T31-4 Visualization and Analysis of Geographical Process (4)**

Room: Mercury (Miraikan)

Datetime: Thu 18th July 8:30-10:20

Chair: *Manjula Ranagalageoqe* (Rajarata University of Sri Lanka)

### **T31-4-1 Detecting Cooling Effect of Landscape Composition and Configuration: An Urban Heat Island Study on Hangzhou**

*Hao Hou, Ronald Canero Estoque*

### **T31-4-2 Individual level heat stress evaluation using GPS towards smart navigation system**

*Takahiro Yoshida, Yoshiki Yamagata, Daisuke Murakami*

### **T31-4-3 Visualization and Spatio-temporal Analysis of Tsunami Inundation: A Case of the Great East Japan Earthquake**

*Yuki Iwai*

### **T31-4-4 Long-term analysis of irrational water use processes based on cartographic materials and remote sensing data**

*Andrey A. Medvedev, Natalia A. Alekseenko, Natalia O. Telnova, Alexander V. Koshkarev*

## **T17-1 Maps and the Internet 1**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Thu 18th July 9:20-10:20

Chair: *TBD* (TBD)

### **T17-1-1 Pre-Pottery Neolithic age spatial planning: The typo-morphology of the first urbanisation with reference to three Akarçay Tepe plaques**

*Şirin Gülçen Eren*

### **T17-1-2 The Application Programmer Interface (API) in Modern Cartography: Development and Prospects**

*Michael P. Peterson*

### **T17-1-3 go-cart.io: a web application for generating contiguous cartograms**

*Shi Tingsheng, Ian K Duncan, Michael T Gastner*

## **T29-1 Space-time mapping for Digital Humanities**

Room: Conference Room 4+5 (Plaza Heisei)

Datetime: Thu 18th July 9:20-10:20

Chair: *Nakaya Tomoki* (Tohoku University)

### **T29-1-1 Changes in the distribution and structure of white-collar workers' residences in Japan during the period of modernization**

*Takashi Kirimura*

### **T29-1-2 Space-Time Cube and Mixed Reality – New Approaches to Support Understanding Historical Landscape Changes**

*Mathias Jahnke, Edyta Paulina Bogucka, Maria Turchenko*

### **T29-1-3 Space-time mapping of historical plague epidemics in modern Osaka, Japan**

*Tomoki Nakaya, Kazumasa Hanaoka, Shohei Nagata*

## **T03-2 Cartographic Heritage 2: Map Libraries**

Room: Mars (Miraikan)

Datetime: Thu 18th July 10:50-12:10

Chair: *Mátyás Gede* (ELTE Eötvös Loránd University, Budapest, Hungary)

### **T03-2-1 Unlocking the Geospatial Past with Deep Learning – Establishing a Hub for Historical Map Data in Switzerland**

*Magnus Heitzler, Lorenz Hurni*

### **T03-2-2 Accessibility evaluation of topographic maps in the National Library of Poland**

*Marta Kuzma, Albina Moscicka*

### **T03-2-3 Documenting, organizing and demonstrating the cartographic wealth of a library, through an information system, to the public**

*Angeliki Tsorlini*

## **T07-6 Educational approaches for cartography**

Room: Venus (Miraikan)

Datetime: Thu 18th July 10:50-12:10

Chair: *Ferjan Ormeling* (University of Amsterdam Library, Netherlands)

### **T07-6-1 Cartographic Presentation as the Central Theme for Geospatial Education**

*Rakesh Malhotra, Terry Mcneill, Carrie Francis, Timothy Mulrooney*

### **T07-6-2 Teaching of geographical space relations for cartography - Academic Outdoor Station in Poznan (Poland)**

*Beata Medynska-Gulij, Maciej Smaczynski, Dariusz Lorek, Łukasz Halik, Łukasz Wielebski, Tymoteusz Horbinski, Paweł Cybulski*

### **T07-6-3 New patterns for geography field practice education based on location services**

*Ling Zhang, Qian Jia, Shaojun Liu, Ling Ruan, Yi Long*

### **T07-6-4 A preliminary study of geographical names research: Review of cartography education & research in Indonesia**

*Ari Cahyono, Hartono Hartono, Bowo Susilo, Niken Wirasanti*

## **T09-8 Geosimulation, Spatial data assessment and handling**

Room: Miraikan Hall (Miraikan)

Datetime: Thu 18th July 10:50-12:10

Chair: *Bin Jiang* (University of Gävle)

### **T09-8-1 Using building types and demographic data to improve our understanding and use of urban sprawl simulation**

*Mojtaba Eslahi, Rani El Meouche, Anne Ruas*

### **T09-8-2 Geospatial and Simulation a Point of Convergence**

*Christopher Victor Budas*

### **T09-8-3 Spatial data quality in multi-criterial analysis for decision making process**

*Vaclav Talhofer, Sárka Hošková-Mayerová*

### **T09-8-4 Calculate Accurate 3D Cost Distance Efficiently**

*Yaqian Chen, Jiangfeng She, Xingong Li*

## **T13-6 Map Design VI: Production**

Room: Uranus (Miraikan)

Datetime: Thu 18th July 10:50-12:10

Chair: *Kenneth Field* (Esri inc)

### **T13-6-1 Miura-ori, Basics for Designing its Folding Machines**

*Koryo Miura*

### **T13-6-2 Designing the Imagery on Image Maps – How far can we take it?**

*Christian E. Murphy*

### **T13-6-3 Efficiency of Cartographic production for Decision-making**

*Christine Zanin*

### **T13-6-4 Developing and Evaluating Multi-Scale Map Styles: Creating a Multi-Scale Legend**

*Mathias Gröbe, Dirk Burghardt*

## **T17-2 Maps and the Internet 2**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Thu 18th July 10:50-12:10

Chair: *TBD* (TBD)

### **T17-2-1 GSI Maps - Showcase of National Geospatial Data**

*Kaito Kamimura*

### **T17-2-2 A context-driven geospatial web service approach towards the design of situational awareness maps**

*Sin Yi Ho, Jung Hong Hong*

### **T17-2-3 Roles of Ontologies in Cartography**

*Otakar Čerba*

## **T21-2 Standards for geospatial information**

Room: Saturn (Miraikan)

Datetime: Thu 18th July 10:50-12:10

Chair: *Franz-Josef Behr* (Stuttgart University of Applied Sciences)

### **T21-2-1 Some Considerations to Improve the General Feature Model and General Portrayal Model in Gittok**

*Morishige Ota*

### **T21-2-2 A Spanish Standard for defining Open Geographic Data**

*Ana Velasco, Antonio F Rodríguez-Pascual, Celia Sevilla-Sánchez, Juan Manuel Rodríguez-Borreguero*

### **T21-2-3 Selected cartographic products of the Polish Geological Survey in light of the international data standards and OneGeology experience**

*Katarzyna Jóźwik, Marcin Ślodkowski, Urszula Stępień*

### **T21-2-4 Study on multi-source data integrating standard and 3D cartographic visualization of urban flooding based on CityGML**

*Jiemin Zhou, Jie Shen, Lukáš Herman, Yixian Du*

## **T26-3 User Issues in Interaction Design**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Thu 18th July 10:50-12:10

Chair: *Luciene Delazaro* (Federal University of Parana)

### **T26-3-1 Interacting with Maps in Virtual and Augmented Reality**

*Bernhard Jenny, Kadek Ananta Satriadi, Yalong Yang, Christopher R. Austin, Simond Lee, Nian Chan, Maxime Cordeil, Barrett Ens*

### **T26-3-2 Does Interactivity increase map user's reasoning? A study with environmental map users**

*Andre Luiz Alencar De Mendonça, Carina Coelho*

### **T26-3-3 Interactive & Multiscale Thematic Maps: A Preliminary Study**

*Robert E Roth, Meghan Kelly, Nick Underwood, Nick Lally, Kristen Vincent, Carl Sack*

### **T30-4 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (4)**

Room: Innovation Hall (Miraikan)

Datetime: Thu 18th July 10:50-12:10

Chair: *Takashi Oguchi and Tzai-Hung Wen* (Univ. Tokyo, Japan, National Taiwan Univ.)

#### **T30-4-1 Geomorphological mapping based on DEMs and GIS: A review**

*Takashi Oguchi*

#### **T30-4-2 Toward high resolution mapping of patterned ground with vegetation in Spitsbergen using a UAV**

*Jaeyong Lee, Takashi Oguchi*

#### **T30-4-3 Assess the impact of land use changes on erosion and sedimentation in Dak Uy reservoir**

*Hoa Thi Viet Le, Lan Thi Huong Pham, Nguyet Minh Le*

#### **T30-4-4 Assessing the instability of Dong Nai River in Bien Hoa District using Bank Erosion Hazard Index (BEHI) and Remote Sensing and GIS**

*Lan Thi Huong Pham, Nguyet Minh Le, Hoa Thi Viet Le*

### **T31-5 Visualization and Analysis of Geographical Process (5)**

Room: Mercury (Miraikan)

Datetime: Thu 18th July 10:50-12:10

Chair: *Yuji Murayama* (University of Tsukuba)

#### **T31-5-1 Validity of using of GIS, SDI, Remote Sensing and Environmental factors for site selection of zones of coffee agriculture localization suitability modeling in Maraba sector, south province of Rwanda**

*Jean Pierre Hitimana*

#### **T31-5-2 Regioviz: a new visualisation tool dedicated to regional comparisons**

*Ysebaert Ronan, Guérois Marianne*

#### **T31-5-3 Mapping votes and representing power: Spatio-temporal and multiscalar analysis of electoral results in Tunisia between 2011 and 2018.**

*Maher Ben Rebah*

#### **T31-5-4 Features of creating multi-time thematic animations of the Arctic environment pollution on the example of Novaya Zemlya**

*Andrey A. Medvedev, Natalia A. Alekseenko, Maria Arsenyeva*

### **T33-1 Rethinking Bertin Method 1 (framework)**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Thu 18th July 10:50-12:10

Chair: *Anne-Lyse Renon* (University of Strasbourg (ACCRA EA3402), EHESS (LIAS UMR8178))

#### **T33-1-1 Graphic design and research in social sciences: Jacques Bertin and the Laboratoire de Graphique.**

*Anne-Lyse Renon*

#### **T33-1-2 From Semiology of Graphics to Cultural Analytics: flaws in the mathematization of visible**

*Anthony Masure*

### **T03-3 Cartographic heritage 3: Applications**

Room: Mars (Miraikan)

Datetime: Thu 18th July 14:50-16:10

Chair: *Evangelos Livieratos* (Aristotle University of Thessaloniki)

#### **T03-3-1 From historical cartography to historical mapping: digital edition of Gaul/Raczynski topographic map of Greater Poland (1807-1812)**

*Tomasz Panecki*

#### **T03-3-2 3D Model of Historical Vltava River Valley: Combination of Sources**

*Jiri Cajthaml, Darina Kratochvilova, Tomas Janata*

#### **T03-3-3 Transformation of the landscape of pre-industrial space in the multimedia depiction**

*Dariusz Lorek*

#### **T03-3-4 Automated summit spot height generation for modern topographic mapping**

*Samantha T Arundel, Arthur Chan*

### **T09-9 Accessibility**

Room: Miraikan Hall (Miraikan)

Datetime: Thu 18th July 14:50-16:10

Chair: *X. Angela Yao* (University of Georgia)

#### **T09-9-1 A systematic evaluation of accessibility measures by the two-step floating catchment area (2SFCA) method**

*Xiang Chen, Pengfei Jia*

#### **T09-9-2 Network-based Visualisation of Accessibility for a Public Transport System**

*Andreas Keler, Lukas A. Bug, Jukka M. Krisp*

#### **T09-9-3 GIS-analysis of ground transport accessibility of fire stations at regional scale**

*Ekaterina Sergeevna Podolskaia, Dmitriy Vladimirovich Ershov, Konstantin Aleksandrovich Kovganko*

## **T11-1 Near East & Islam Cartography**

Room: Saturn (Miraikan)

Datetime: Thu 18th July 14:50-16:10

Chair: *TBD* (Lomonosov Moscow State University)

**T11-1-1 Kitab-ı Bahriye (Book of Navigation), Commemoration of the Piri Reis and Understand His World Map of 1513.**

*Aytac Yurukcu*

**T11-1-2 Hormuz around 1300. Catalan Atlas and his sources (Marco Polo, Odoric, Ibn Battuta)**

*Vladimir Liscak*

**T11-1-3 Ancient Anatolian Grids**

*Şirin Gülçen Eren*

## **T16-1 Maps for the Disabled**

Room: Mercury (Miraikan)

Datetime: Thu 18th July 14:50-16:10

Chair: *Andrey A. Medvedev* (Institute of Geography, Russian Academy of Sciences)

**T16-1-1 Testing Maps for Visually Impaired People in Kurdistan**

*Ashna Abdulrahman Kareem*

**T16-1-2 Plain cartography - web maps for visually impaired and elderly people**

*Juha Oksanen, Pyy Kettunen, Christian Koski*

**T16-1-3 Toward Accessible Hazard Mapping: Tactile Risk Maps and Disaster Preparedness**

*Harrison Carlton Cole*

## **T17-3 Maps and the Internet 3**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Thu 18th July 14:50-16:10

Chair: *TBD* (TBD)

**T17-3-1 Functionality similarities of global web mapping services in the context of responsive map design**

*Tymoteusz Horbiński, Paweł Cybulski*

**T17-3-2 Multimedia Presentation of Spatial Journalistic Content**

*Zeinab Torabi, Jan Wilkening, Juliane Cron*

**T17-3-3 Visualisation and analysis of multi-resolution raster geodatasets in the cloud**

*Lassi Allan Lehto, Jaakko Kähkönen, Juha Oksanen, Tapani Sarjakoski*

**T17-3-4 Finding hotspots by location-direction-enabled photographs focusing on intersection of lines of sight**

*Hideyuki Fujita, Shota Sagara, Tadashi Ohmori, Takahiko Shintani*

## **T26-4 Use Case Domain Analyses**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Thu 18th July 14:50-16:10

Chair: *Alena Vondrakova* (Palacky University Olomouc)

**T26-4-1 Maps in Citizen Science: A Preliminary Analysis of their Use and User Issues**

*Artemis Skarlatidou, Marcos Moreu*

**T26-4-2 Graphic design and placement of map tools in mobile map application**

*Tymoteusz Horbiński, Beata Medyńska-Gulij, Paweł Cybulski*

**T26-4-3 Map Use in Transit Control Centers: Mapping geographic information flows**

*Emily Domanico*

**T26-4-4 Testing geovisualisations for effective environmental engineering decision-making**

*Jess Hepburn, David Fairbairn*

## **T28-1 Nautical Charting: Production and Content**

Room: Venus (Miraikan)

Datetime: Thu 18th July 14:50-16:10

Chair: *Ron Furness* (ICA Marine Cartography Chair)

**T28-1-1 Validation of the shoal-biased pattern of bathymetric information on nautical charts.**

*Christos Kastrisios, Brian Calder, Giuseppe Masetti, Peter Holmberg*

**T28-1-2 History of Japan's chart production in 150 years**

*Toru Kajimura*

**T28-1-3 Adding value to ENC's: Land features**

*Shachak Peeri, Noel Dyer*

**T28-1-4 Raster charting products in an ENC-first era**

*Christie Ence, Shachak Pe'Eri, John Nyberg*

## **T29-2 Mapping the past**

Room: Conference Room 4+5 (Plaza Heisei)

Datetime: Thu 18th July 14:50-16:10

Chair: *Akihiro Tsukamoto* (Tokushima University)

### **T29-2-1 Transformation of the Vltava Historical Riverine Landscape within the Modern Times**

*Jiri Krejci, Jiri Cajthaml*

### **T29-2-2 Digital archiving the space and memory of Kyoto across space and time using GIS**

*Naomi Kawasumi, Hirotaka Sato, Shunpei Yamamoto, Keiji Yano*

### **T29-2-3 Premodern City Layouts Drawn on Published Maps: A Comparative Analysis of Edo, Osaka, and Kyoto**

*Akihiro Tsukamoto*

## **T30-5 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (5)**

Room: Innovation Hall (Miraikan)

Datetime: Thu 18th July 14:50-16:10

Chair: *Takashi Oguchi and Tzai-Hung Wen* (Univ. Tokyo, Japan, National Taiwan Univ.)

### **T30-5-1 Landslide hazard zonation assessment using GIS analysis at the coastal area of Safi (Morocco)**

*El Bchari Fatima Fatima, Barbara Theilen Willige, H. Ait Malek*

### **T30-5-2 Three-dimensional desktop morphometric models for the Arctic Ocean floor**

*Igor V. Florinsky, Sergei V. Filippov*

### **T30-5-3 Sea ice kinematic features in the Arctic outflow region and their associations with Arctic Northeast Passage accessibility**

*Da Wei Gui, Xiao Ping Pang, Rui Bo Lei, Xi Zhao, Jia Wang*

### **T30-5-4 Comparison of Leads Mapping in the Arctic Ocean Between Landsat and MODIS Ice Surface Temperature Products**

*Xiaoping Pang, Pei Fan, Xi Zhao, Qing Ji*

## **T33-2 Rethinking Bertin Method 2 (practice)**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Thu 18th July 14:50-16:10

Chair: *Francis Harvey* (Leibniz Institute for Regional Geography)

### **T33-2-1 A dialectical approach to the systematic analysis of geovisual communication using Bertin's visual variables**

*Francis Harvey*

### **T33-2-2 Reaffirmation of J. Bertin's Ordinal Matrix for business strategy decision**

*Keiichi Ishida*

### **T33-2-3 A practice of information processing by rearranging matrix of Jacques Bertin - application of diagram in environmental color workshop -**

*Qifan Huang, Akiyo Kobayashi*

### **T33-2-4 The design of useful graphics in Bertin's thought. A case study from the Urban Atlas of Jeddah.**

*Mohsen Dhieb, Abdulhamid Jamil*

## **T41-1 Maps and Games 1**

Room: Uranus (Miraikan)

Datetime: Thu 18th July 14:50-16:10

Chair: *Tomoyasu Maruyama* (Google LLC)

### **T41-1-1 How to Play with Maps**

*Ross Thorn*

### **T41-1-2 How an augmented reality game (Pokémon GO) affected volunteer contributions to OpenStreetMap**

*Brian Alan Johnson*

### **T41-1-3 Location Based Elements into Gaming Industry**

*Tomoyasu Maruyama*

## **T03-4 Cartographic Heritage 4: The Data Behind**

Room: Mars (Miraikan)

Datetime: Thu 18th July 16:40-18:00

Chair: *Jiri Cajthaml* (Czech Technical University in Prague)

### **T03-4-1 Description of Cartographic Heritage in European Data Model**

*Albina Kinga Moscicka, Agnieszka Zwirowicz-Rutkowska*

### **T03-4-2 A semi-automated workflow for processing historic aerial photography**

*Nathan Piekielek*

### **T03-4-3 Visualizing and Linking Cartographic Resources across Discovery Environments**

*Kimberly Durante, Emily Prince*

### **T03-4-4 GeoDataHub: Building centralised repository of authoritative cartographic and geospatial resources**

*Igor Drecki*

## **T09-10 Big Data and machine learning (I)**

Room: Miraikan Hall (Miraikan)

Datetime: Thu 18th July 16:40-18:00

Chair: *Lei Zou* (Texas A&M University)

**T09-10-1 Analysing tourism movements along the Danube river based on geotagged Flickr photography**

*Mátyás Gede, Bálint Kádár*

**T09-10-2 Visualizing and Mining Social Media Data for Smart Emergency Management**

*Lei Zou*

**T09-10-3 Estimating the Crowd Size of a Rally by Crowdsourcing-Geocomputation**

*T. Edwin Chow*

**T09-10-4 Research on Monitoring Location Model Based on Geo-Video Semantics**

*Dan Hu, Wenjing Li, Li Siyi*

## **T11-2 Eastern Europe & The Americas**

Room: Saturn (Miraikan)

Datetime: Thu 18th July 16:40-18:00

Chair: *TBD* (TBD)

**T11-2-1 From Coast to Coast: The Mapping of the Adriatic Sea by the Joint Forces of the Austro-Hungarian and Italian Hydrographic Offices**

*Mirela Altic*

**T11-2-2 Depiction of Line Features on Folded Maps on Example of Old Maps of the Vltava River**

*Tomas Janata, Jiri Krejci*

**T11-2-3 Jewish settlement plans in Bohemia from the first half of the 18th century**

*Jiří Drozda, Šarka Steinová, Filip Paulus*

**T11-2-4 Mapping a Nation: Daniel Carter Beard's Time as a Surveyor for the Sanborn Map Company**

*John J. Swab*

## **T16-2 Technology and Multisensory Maps**

Room: Mercury (Miraikan)

Datetime: Thu 18th July 16:40-18:00

Chair: *Carla Cristina da Sena* (Universidade Estadual Paulista (UNESP) )

**T16-2-1 Tactile thematic maps for the territory of Russia: multivariate representation of geographic information**

*Andrey A. Medvedev*

**T16-2-2 TouchIt3D: Technology (not only) for Tactile Maps**

*Radek Barvir, Alena Vondrakova, Jan Brus*

**T16-2-3 Mobility routing optimization for physical accessibility and thermoregulation**

*Jeffrey R Heuwinkel, Matthew T. Rice, Manzhu Yu, Kevin M. Curtin*

## **T17-4 Maps and the Internet 4**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Thu 18th July 16:40-18:00

Chair: *TBD* (TBD)

**T17-4-1 Web Maps for Risk Communication: Assessing Availability of Online Disaster Maps on Government Web Sites in Indonesia**

*Kartika Puspita Sari, Hidehiko Kanegae*

**T17-4-2 Cartographic storytelling: 150 years of Swiss Federal Population Census**

*Olaf König*

**T17-4-3 Using Internet Streamed Data for Sport Visualization**

*Rex G Cammack, Paul Hunt*

**T17-4-4 Sharing Historical Map Collections Online**

*Aileen R. Buckley*

## **T26-5 User Study Experimental Design Issues**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Thu 18th July 16:40-18:00

Chair: *Artemis Skarlatidou* (University College London)

**T26-5-1 A visual approach to creating multivariate geovisualization test data**

*Thomas Lerch, Susanne Bleisch*

**T26-5-2 A review of map types used in empirical research in cartography**

*Katarzyna Słomska*

**T26-5-3 A note on the Relationship between Spatial Recognition and Behavior while Walking in the City**

*Kaori Ito, Yusuke Sakurai, Yuri Fujita, Andrew Burgess*

**T26-5-4 Design of a cartographic eye tracking-EEG user experiment**

*Merve Keskin, Kristien Ooms, Philippe De Maeyer, Ahmet Ozgur Dogru*

### **T29-3 Web and ICT for Digital Humanities**

Room: Conference Room 4+5 (Plaza Heisei)

Datetime: Thu 18th July 16:40-18:00

Chair: *Keiji Yano* (Ritsumeikan University)

**T29-3-1 Defensive Architecture Mapping: a case study in the city of Curitiba, Paraná, Brasil**  
*Debora Raquel Faria, Claudia Robbi Sluter, Alessandro Filla Rosaneli, Silvana Philippi Camboin*

**T29-3-2 Modern Archeological Mapping: Towards Immersive VR Use in Archeology**  
*Alisa A Pettitt, Sven Fuhrmann*

**T29-3-3 Mining multiple sources of historical data: The example of a standardized dataset of medieval monasteries and convents in France**  
*Adam Mertel, David Zbiral*

**T29-3-4 Japanese Map Warper for Spatial Humanities: The Japanese old maps portal site**  
*Keiji Yano, Satoshi Imamura, Ryo Kamata*

### **T30-6 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (6)**

Room: Innovation Hall (Miraikan)

Datetime: Thu 18th July 16:40-18:00

Chair: *Takashi Oguchi and Tzai-Hung Wen* (Univ. Tokyo, Japan, National Taiwan Univ.)

**T30-6-1 Flash Flood Hazard Mapping Using Satellite Images and GIS Tools: A case study of the central High Atlas (Morocco).**  
*El Bchari Fatima Fatima, Barbara Theilen Willige, Abdellatif Souhel*

**T30-6-2 Dynamics of lake area on the Qinghai-Tibet plateau from 2000 to 2015**  
*Xianghong Che, Min Feng, Jiping Liu, Yong Wang, Qing Sun*

**T30-6-3 GIS-based approach of “natural basis” developing for vegetation cover mapping**  
*Vera Ryzhkova, Michael Korets, Irina Danilova*

### **T33-3 Rethinking Bertin Method 3 (symbology)**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Thu 18th July 16:40-18:00

Chair: *Takashi Morita* (Hosei University)

**T33-3-1 Design Issues on Context Based Cartographic Communication using Extended Visual Variables**  
*Takashi Morita*

**T33-3-2 When marks become graphics. Rediscoring a forgotten Bertin's fork ?**  
*Gilles Rouffineau*

**T33-3-3 Effect of Frame Structure on Interpretation of Map Symbols**  
*Zhilin Li*

### **T41-2 Maps and Games 2**

Room: Uranus (Miraikan)

Datetime: Thu 18th July 16:40-18:00

Chair: *Tomoyasu Maruyama* (Google LLC)

**T41-2-1 Preparation of the Future with Minecraft® on Demand**  
*François Lecordix, Sivakavi Kumarasamy, Fernando Da Graca, Emmanuel Seguin*

**T41-2-2 Coupling a collaborative digital map and a dashboard: an optimal starting point for urban project learning in engineer training? The case of the serious game “Urb'Act”**  
*Nathalie Molines, Carine Henriot*

## Fri 19th July

### T08-1 Generalization Processes

Room: Uranus (Miraikan)

Datetime: Fri 19th July 8:30-10:20

Chair: *Anne Ruas* (IFSTTAR, France)

#### T08-1-1 Is Deep Learning the New Agent for Map Generalization?

*Guillaume Touya, Xiang Zhang, Imran Lokhat*

#### T08-1-2 Application of Deep Learning for 3D building generalization

*Yue Wu, Yevgeniya Filippovska, Valentina Schmidt, Martin Kada*

#### T08-1-3 Automatic Selection Method of Urban Road Network Considering Structural Characteristics

*Wei Wu, Zhaoting Ma*

### T09-11 Big Data and machine learning (II)

Room: Miraikan Hall (Miraikan)

Datetime: Fri 19th July 8:30-10:20

Chair: *Bin Jiang* (University of Gävle)

#### T09-11-1 Automatic crater detection by mining existing crater map

*Cheng-Zhi Qin, Yan-Wen Wang, Wei-Ming Cheng, A-Xing Zhu*

#### T09-11-2 Lexical variation in Japanese dialects revisited: Geostatistic and dialectometric analysis

*Péter Jeszenszky, Yoshinobu Hikosaka, Keiji Yano*

#### T09-11-3 Spatial Component Models with Artificial Neural Networks for Spatially Constrained Regionalization

*Michael Govorov, Giedre Beconyte, Gennady Gienko*

### T10-1 T10 GI for Sustainability

Room: Mars (Miraikan)

Datetime: Fri 19th July 8:30-10:20

Chair: *Alexander Panin* (Lomonosov Moscow State University)

#### T10-1-1 Spatio-Temporal Mapping of Water Consumption at Public Institutions: Case of the United Arab Emirates University

*M. M. Yagoub*

#### T10-1-2 Spatial Modeling of Disaster Resilience in the Lower Mississippi River Basin

*Heng Cai*

#### T10-1-3 Geographic Information and Geo-visualization in support of Disaster Resilience

*Edward Kurwakumire, Paul Muechechete, Shelter Kuzhazha, Guy Blanchard Ikoukou*

### T11-3 Western Europe

Room: Saturn (Miraikan)

Datetime: Fri 19th July 8:30-10:20

Chair: *TBD* (TBD)

#### T11-3-1 Kaleidoscope of Swiss Cartography

*Stefan Raber, Lorenz Hurni*

#### T11-3-2 Mapping in Belgium in the 19th Century in a wider context

*Philippe De Maeyer*

#### T11-3-3 Thematic cartography of Portuguese winegrowing (1850-1952)

*Mário Gonçalves Fernandes, Helder Trigo Marques*

#### T11-3-4 'Heaping Offa upon Pelion, and Olympus upon Offa': An assessment of the role of model making in the development of relief portrayal from 1780 to 1900.

*Alastair William Pearson*

### T38-1 Mapping the Environment 1

Room: Conference Room 4+5 (Plaza Heisei)

Datetime: Fri 19th July 9:20-10:20

Chair: *TBD* (TBD)

#### T38-1-1 Mapping of Physical Vulnerability in Tiger Habitat Areas: A Case Study of Tiger Corridor of Rajasthan, India

*Bhanwar Vishvendra Raj Singh, Anjan Sen*

#### T38-1-2 The visible impacts of human activities constructing hydropower dam on Vietnamese Mekong Delta and conceptual solutions for responses

*Nhan Nguyrn Huu, Shigeko Haruyama*

#### T38-1-3 Statistical maps for comparative visualization of landscape changes for industrial centers from different countries

*Beata Medynska-Gulij, Paweł Cybulski, Łukasz Wielebski, Dariusz Lorek, Tymoteusz Horbinski*



## **T40-1 AI, Robotics, Autonomous Cars and Mapping 1**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Fri 19th July 9:20-10:20

Chair: *TBD* (TBD)

### **T40-1-1 Transferring Map Styles based on Generative Adversarial Networks**

*Yuhao Kang, Song Gao*

### **T40-1-2 A object detection algorithm based on pyramid Convolutional Neural Networks(CNN) and feature map fusion model**

*Nu Wen*

### **T40-1-3 Towards Storytelling with Animated Pictorial Map Objects – An Experiment with Convolutional Neural Networks**

*Raimund Schnürer, Cengiz Öztireli, René Sieber, Lorenz Hurni*

## **T43-1 Maps and society**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Fri 19th July 9:20-10:20

Chair: *Koshiro Suzuki* (University of Toyama)

### **T43-1-1 A city in liquid modernity: a sociological perspective**

*Edyta Baranska*

### **T43-1-2 Treatment of cartography in official classification of fields of sciences and its misuse by the State Educational Inspectorate and the University of Tetova**

*Bashkim Idrizi*

### **T43-1-3 Connecting users to trusted geospatial information for Europe**

*Michael John Cory*

## **T08-2 Shape and multi-scale measures**

Room: Uranus (Miraikan)

Datetime: Fri 19th July 10:50-12:10

Chair: *Paulo Raposo* (University of Tennessee, Knoxville, USA)

### **T08-2-1 Between the Lines: Measuring Areal Displacement in Line Simplification**

*Barry J Kronenfeld, Jiaxin Deng*

### **T08-2-2 Building-network: Concept, generation method and centrality analysis**

*Xiao Wang, Dirk Burghardt*

### **T08-2-3 Exploring essential variables in the settlement selection for small-scale maps using machine learning**

*Izabela Karsznia, Karolina Sielicka*

## **T09-12 Investigating spatial patterns**

Room: Miraikan Hall (Miraikan)

Datetime: Fri 19th July 10:50-12:10

Chair: *X. Angela Yao* (University of Georgia)

### **T09-12-1 Research on the Spatial Distribution Pattern of Producer Service Firms in Urban Harbin**

*Zhao Yang Yang, Liu Ji Ping, Zhang Fu Hao, Liu Meng Meng*

### **T09-12-2 Exploring spatio-temporal hotspots of land price change with housing transaction data in Seoul**

*Seonga Cho, Gunhak Lee*

### **T09-12-3 Where do taxi trips start and end? Implications For Future Car-sharing For Commuting**

*Pengyu Zhu, Yong-Hong Kuo, Marlon Ives Tanuihusada, Wei Qiang, Jie Wang*

### **T09-12-4 A spatial analytical approach towards understanding racial residential segregation in Gauteng province (South Africa)**

*Samy Katumba, Inger Fabris-Rotelli, Alfred Stein, Serena Coetzee*

## **T11-4 Older Japan Cartography**

Room: Saturn (Miraikan)

Datetime: Fri 19th July 10:50-12:10

Chair: *TBD* (TBD)

### **T11-4-1 The national map of Japan compiled by the Tokugawa Shogunate**

*Hirota Kawamura*

### **T11-4-2 The Revising Process of ‘Kaisei Nihon Yochirotei Zenzu (Sekisui-zu) ‘**

*Toshikazu Kaida*

### **T11-4-3 Global influence of the map of Japan produced by Japanese cartographer Sekisui Nagakubo**

*Motohiro Tsujimoto*

## **T27-1 Social Applications of Geovisual Analytics**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Fri 19th July 10:50-12:10

Chair: *Anthony Robinson* (The Pennsylvania State University)

**T27-1-1 Visual Analytics for Regional Economic Environment Factors Based on a Dashboard Design**  
*Chenyu Zuo, Linfang Ding, Liqiu Meng*

**T27-1-2 Reasoning about Socio-Economic Data: A Visual Analytics Approach to Bayesian Network**  
*Ekaterina Chuprikova, Liqiu Meng*

**T27-1-3 Geovisual analysis of VGI for understanding people's behaviour in relation to multifaceted context**  
*Natalia Andrienko, Gennady Andrienko, Siming Chen, Dirk Burghardt, Alexander Dunkel, Ross Purves*

## **T30-7 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (7)**

Room: Innovation Hall (Miraikan)

Datetime: Fri 19th July 10:50-12:10

Chair: *Tzai-Hung Wen and Takashi Oguchi* (National Taiwan Univ., Univ. Tokyo, Japan)

**Ecological Change Analysis of Lanzhou City Based on Remote Sensing Ecological Index**  
*Huang Yu Han, Yan Hao Wen*

**T30-7-2 Mapping Anisotropic Landscape for Understanding Underlying Spatial Structure of Air Pollution**  
*Chen-Hsuan Tu, Tzai-Hung Wen*

**T30-7-3 Remote Sensing and Geospatial Analytics for Sustainable Development Assessment in Urban Areas**  
*Xiaojun Yang, Di Shi, Feilin Lai, Shijun Jiang, Ranhao Sun*

**T30-7-4 Characterizing Spatial Variations of Urban Growth Patterns in Beijing, China through Spatial Analysis and Geovisualization**  
*Ting Liu, Xiaojun Yang*

## **T38-2 Mapping the Environment 2**

Room: Conference Room 4+5 (Plaza Heisei)

Datetime: Fri 19th July 10:50-12:10

Chair: *TBD* (TBD)

**T38-2-1 Potential Groundwater Extraction and Piezometric Surface Fluctuations in Puruliya, West Bengal – A GIS based study**  
*Devarupa Gupta*

**T38-2-2 Wetland Loss in Northeastern Italy Documented by Historical Maps**  
*Silvia Elena Piovan, Marco Filippini, Michael Edward Hodgson*

**T38-2-3 Digital cartography for geoheritage: turning an analogue geotourist map into digital**  
*Márton Pál, Gáspár Albert*

## **T40-2 AI, Robotics, Autonomous Cars and Mapping 2**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Fri 19th July 10:50-12:10

Chair: *TBD* (TBD)

**T40-2-1 Demolished building detection from aerial imagery using deep learning**  
*Shu Su, Takahiko Nawata*

**T40-2-2 Possibilities of high precision GPS data in autonomous driving**  
*Márton Pál, Fanni Vörös, István Elek, Béla Kovács*

**T40-2-3 Automated Extraction of Drainage Channels and Roads through Deep Learning**  
*Lawrence V Stanislawski, Tyler Brockmeyer, Ethan Shavers*

**T40-2-4 Scoping a vocabulary for spatial relation properties**  
*Dalia Elena Varanka*

## **T43-2 Miscellaneous maps (1)**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Fri 19th July 10:50-12:10

Chair: *Yoshiki Wakabayashi* (Tokyo Metropolitan University)

**T43-2-1 Long term archiving orienteering maps project in Slovenia**  
*Dušan Petrovič*

**T43-2-2 The role of disease maps in influenza epidemiological surveillance in Japan**  
*Tomohiko Arahori*

**T43-2-3 Questionnaire Survey about the Reasons of Young People Migrating to the Tsunami-hit Area**  
*Kayo Okabe, Mayumi Dan, Chikako Nakayama*

**T43-2-4 Seeing the Night Sky**  
*Colin G. Flynn, Matthew T. Rice*

### **T08-3 Generalization in Practice**

Room: Uranus (Miraikan)

Datetime: Fri 19th July 14:50-16:10

Chair: *Pia Bereuter* (FHNW University of Applied Sciences of Northwestern Switzerland)

#### **T08-3-1 CartAGen: an Open Source Research Platform for Map Generalization**

*Guillaume Touya, Imran Lokhat, Cécile Duchêne*

#### **T08-3-2 Real-time Cartographic Generalisation: Risk Management Maps Case Study**

*Karel Stanek, Petr Silhak*

#### **T08-3-3 A Parallel Method for Accelerating Visualization for Vector Tiles**

*Wei Hu, Lin Li, Chao Wu, Hang Zhang, Haihong Zhu*

### **T09-13 Terrian / Landscape analysis, modeling, and visualizaiton**

Room: Miraikan Hall (Miraikan)

Datetime: Fri 19th July 14:50-16:10

Chair: *Lei Zou* (Texas A&M University)

#### **T09-13-1 Density maps of geophysical study as a new type of integrated characteristic of geophysical fields in atlases**

*Dmitriy Sergeevich Loginov, Sergey Anatolyevich Krylov*

#### **T09-13-2 Geographical Scene Reconstruction and Application of ancient Site with Fused Multi-source Data**

*Lin Yang, Jiangwei Shen, Fangzihao Zheng*

#### **T09-13-3 Scale Effects on Land Loss Modeling in the Mississippi River Delta**

*Nina S.-N. Lam, Heng Cai, Lei Zou, Kam-Biu Liu*

### **T11-5 Japan and Korea in 19th Century**

Room: Saturn (Miraikan)

Datetime: Fri 19th July 14:50-16:10

Chair: *TBD* (TBD)

#### **T11-5-1 An Analysis on the Shape Changes of the Korean Peninsula on the British Charts of the 19th Century and Identification of Factors that Influence the Changes**

*Jong Geun Kim*

#### **T11-5-2 Japan's Most Famous Surveyor: Ino Tadataka and His Iconic 1821 Map of Japan**

*John Francis Brock*

#### **T11-5-3 Restoremment of the early 19th century's geomagnetic declinations in Japan, from Tadataka Inoh's survey azimuth ledger.**

*Akitoshi Omotani*

#### **T11-5-4 Modernization of Topographic Mapping by Japan Meiji Government - Introduction of French Army Mapping Technology and afterwards -**

*Shosuke Hosoi*

### **T14-1 National and Local Mapping Innitiatives**

Room: Mercury (Miraikan)

Datetime: Fri 19th July 14:50-16:10

Chair: *Melissa Ann West* (Member of NZ Cartographic Society)

#### **T14-1-1 BDIG: Continuous updating for National Geospatial Information Databases in National Geographic Institute of Spain.**

*Gonzalo Moreno, Francisco Mariño, Alfonso Marín, Pablo Barreira, Francisco Javier González-Matesanz, Pilar Sánchez Ortiz*

#### **T14-1-2 How do the Swiss produce their New National Map Series?**

*Mark Dominic Wigley*

#### **T14-1-3 Mapping New Zealand 2025 – A National Perspective**

*Karl Baker, Roger Carman*

### **T15-1 Map Projections Knowledge**

Room: Mars (Miraikan)

Datetime: Fri 19th July 14:50-16:10

Chair: *E. Lynn Usery* (U.S. Geological Survey)

#### **T15-1-1 A Semantic Representation of Map Projections Knowledge**

*E. Lynn Usery*

#### **T15-1-2 Map Projection Article on Wikipedia**

*Miljenko Lapaine*

#### **T15-1-3 Harmonization of different type of coordinate systems used for Macedonian official spatial data**

*Bashkim Idrizi*

## **T27-2 Design & Computation in Geovisualization**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Fri 19th July 14:50-16:10

Chair: *Arzu Coltekin* (University of Applied Sciences and Arts, Northwestern Switzerland)

### **T27-2-1 On the relevance of cartography — An interaction design perspective**

*Sebastian Meier, Jordi Tost, Frank Heidmann*

### **T27-2-2 Given the problem of projection, are heat maps an oxymoron?**

*Daniel Strebe*

### **T27-2-3 The Levenshtein distance as a measure of mirror symmetry and homogeneity for binary digital patterns**

*Godfried Theodore Toussaint*

## **T30-8 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (8)**

Room: Innovation Hall (Miraikan)

Datetime: Fri 19th July 14:50-16:10

Chair: *Tzai-Hung Wen and Takashi Oguchi* (National Taiwan Univ., Univ. Tokyo, Japan)

### **T30-8-1 Delineating urban functional regions by considering interaction cohesiveness and function diversity**

*Fei-Ying Felix Kuo, Tzai-Hung Wen*

### **T30-8-2 An investigation of geographic object based image analysis (GEOBIA) for human settlement detection in South Africa**

*Luncedo Ngcofe, Nale Mudau*

### **T30-8-3 Understanding the Process of Geospatial Reasoning: Evidences from an Eye-Tracking Experiment**

*Tzai-Hung Wen, Hao-Yu Liao*

### **T30-8-4 On the Way to an Information System of Russian Transport Networks**

*Irina Lurie, Ali Alyautdinov, Elena Prokhorova, Vladinir Semin*

## **T32a-1 Mapping cities (1)**

Room: Venus (Miraikan)

Datetime: Fri 19th July 14:50-16:10

Chair: *Naoto Yabe* (Tokyo Metropolitan University)

### **T32a-1-1 Visualising a comparison of simulated urban heat islands: a case study of two Slovakian cities**

*Jan Feranec, Juraj Holec, Pavel Stastný, Daniel Szatmári, Monika Kopecká*

### **T32a-1-2 Interactive 3D Time-Integrated Solar Shadow Maps**

*Georg Molzer, Florian Ledermann*

### **T32a-1-3 Is the neighbourhood a level suited to the thermal evaluation of energy loss from buildings?**

*Nathalie Molines, Eduard Antaluca, Fabien Lamarque*

### **T32a-1-4 A history of the city written in a map – cartography as the mirror of socio-political events in Gdańsk in the years of 1918-1939**

*Agnieszka Bień*

## **T37-1 SDGs and Cartography 1 (concept)**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Fri 19th July 14:50-16:10

Chair: *Ayako Kagawa* (United Nations)

### **T37-1-1 A Sustainable world with cartography**

*Ayako Kagawa, Kyoung-Soo Eom*

### **T37-1-2 Seeing the UN Sustainable Development Goals through Maps**

*Menno-Jan Kraak, Britta Ricker, Rob Roth*

### **T37-1-3 SDG Viz: A Web-based System for Visualizing Sustainable Development Indicators**

*Xinyu Gong*

## **T38-3 Mapping the Environment 3**

Room: Conference Room 4+5 (Plaza Heisei)

Datetime: Fri 19th July 14:50-16:10

Chair: *TBD* (TBD)

### **T38-3-1 The transition process of aerosol distribution state with spatio-temporal analysis based on MODIS product**

*Su Wei Qing, Zhang Hong, Chen Li Lon*

### **T38-3-2 Examination of car navigation systems and UX designs – suggestion for a new interface**

*Fanni Vörös, Zoltán Tompos, Béla Kovács*

### **T38-3-3 Disease Mapping and Spatial Landscape Characterization of Tuberculosis Ecology in Malaysia**

*Abdul Rauf Abdul Rasam, Noresah Mohd Shariff*

### **T38-3-4 “Constrained” Cities: The relationship between architectural icons and city growth**

*Carmelo Ignaccolo, Carmelo Ignaccolo*

### **T43-3 Miscellaneous maps (2)**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Fri 19th July 14:50-16:10

Chair: *Yoshiki Wakabayashi* (Tokyo Metropolitan University)

#### **T43-3-1 Geospatial Distribution and Accessibility of Primary and Secondary Schools: A case of Abbottabad City, Pakistan**

*Neema Simon Sumari, Hashir Tanveer, Zhenfeng Shao, Ernest Simon Kira*

#### **T43-3-2 Bayesian Geographical Multi-Dimensional Scaling**

*Hayato Nishi, Yasushi Asami*

#### **T43-3-3 A missing link in cartographic visualization? A case study of “heat maps” effectiveness**

*Tomasz Panecki, Wojciech Pokojski*

#### **T43-3-4 Exploring Spatiotemporal Characteristics in the Twitter Data Using Topic Modelling Techniques**

*Young-Hoon Kim, Hyun Jee Woo*

### **T08-4 Scale issues in Visualization**

Room: Uranus (Miraikan)

Datetime: Fri 19th July 16:40-18:00

Chair: *Guillaume Touya* (LASTIG, IGN France)

#### **T08-4-1 Focus+Context Map Labeling with Optimized Clutter Reduction**

*Benjamin Niedermann, Jan-Henrik Haurert*

#### **T08-4-2 Automatic tactile thematic map generation: research agenda and possible solutions**

*Jakub Wabinski, Albina Moscicka*

#### **T08-4-3 A Self-Adaptive Method of Multi-scale POI Visualization in Indoor Map**

*Yi Xiao, Tinghua Ai, Mengying Jiang, Chen Weng, Miqi Wang*

#### **T08-4-4 Conceptual framework for enhancing visual change point analysis in generalized multi-temporal displays**

*Jochen Schiewe*

### **T11-6 Surveying and Mapping**

Room: Saturn (Miraikan)

Datetime: Fri 19th July 16:40-18:00

Chair: *TBD* (TBD)

#### **T11-6-1 Advancing Reconnaissance and Valorisation: Map Series of German South West Africa (Namibia), 1892-1918**

*Imre Demhardt*

#### **T11-6-2 The bicycle at the end of the 19th century: An instrument for land surveying and mapping**

*Tristan Thielmann*

#### **T11-6-3 Database of Historical Atlases: An Interactive Web Application**

*Petra Jilková, Jiří Cajthaml*

#### **T11-6-4 Reconstructing the lost contours of Charles Hutton**

*Karen Rann, David Fairbairn, Ella Southern*

### **T14-2 Map Production Technologies, Management and Certification**

Room: Mercury (Miraikan)

Datetime: Fri 19th July 16:40-18:00

Chair: *Peter Kunz* (Federal Agency for Cartography and Geodesy (BKG))

#### **T14-2-1 Cartographic Challenges in Producing a Web Map Based on Different Open and Free Datasets**

*Peter Kunz, Joachim Bobrich*

#### **T14-2-2 Technology research on Public welfare map adaptively and quickly producing**

*Zhu Xiu Li, Zhao Yong, Liu Wan Zeng, Wu Chen Chen, Wang Zhongxiang*

#### **T14-2-3 Certificates for High-Quality Cartographic Products**

*Temenoujka Bandrova, Miljenko Lapaine, Silvia Marinova*

#### **T14-2-4 An Algorithm of Automatic Administrative Region Index Map Generation for National-level Map Production**

*Ruolei Wang, Jianjun Liu, Zhao Li, Jun Zhang*

### **T15-2 Map Projections Characteristics**

Room: Mars (Miraikan)

Datetime: Fri 19th July 16:40-18:00

Chair: *Bojan Šavrič* (Esri, Inc.)

#### **T15-2-1 The Equal Earth Projection: Distortion Characteristics, Adoption, and (Social) Media Impact**

*Bojan Šavrič, Bernahrd Jenny, Tom Patterson*

#### **T15-2-2 Polar and Equatorial Aspects of Map Projections?**

*Miljenko Lapaine, Nedjeljko Frančula*

### **T27-3 Visualizing Flows & 3D Geovisualization**

Room: Conference Room 2 (Plaza Heisei)

Datetime: Fri 19th July 16:40-18:00

Chair: *TBD* (TBD)

#### **T27-3-1 Creating Maps of Artificial Spaces for Exploring Trajectories**

*Gennady Andrienko, Natalia Andrienko*

#### **T27-3-2 Workflow for 3D geovisualization of the data obtained with the use of Unmanned Aerial Vehicle in Augmented Reality**

*Łukasz Halik, Maciej Smaczyński, Beata Medyńska-Gulij*

#### **T27-3-3 Geovisualization of complex origin-destination flow maps using Discrete Global Grid Systems**

*Paulo Raposo*

#### **T27-3-4 Using Focus + Context Techniques to Visualize Building Information Model in virtual Geo-Environment**

*Shen Ying, Chengpeng Li, Weiyang Li, Naibin Chen, Zhigang Zhao*

### **T30-9 GIS, Remote Sensing and Cartographic Theory, Methodology and Applications (9)**

Room: Innovation Hall (Miraikan)

Datetime: Fri 19th July 16:40-18:00

Chair: *Tzai-Hung Wen and Takashi Oguchi* (National Taiwan Univ., Univ. Tokyo, Japan)

#### **T30-9-1 Detecting land cover change using Sentinel-2**

*Koji Osumi*

#### **T30-9-2 The visualization of the use of land on the basis of the dynamics of the pedestrian movement from the interval UAV imaging**

*Maciej Smaczynski, Beata Medynska-Gulij, Łukasz Halik*

#### **T30-9-3 Method of Elaboration of Detailed Existing Land Use (ELU) Map of Poland**

*Dariusz Ryszard Dukaczewski*

#### **T30-9-4 The application of GIS in railway heritage management: the case of Yunnan-Vietnam Railway**

*Kun Sang, Silvia Elena Piovan*

### **T32a-2 Mapping cities (2)**

Room: Venus (Miraikan)

Datetime: Fri 19th July 16:40-18:00

Chair: *Naoto Yabe* (Tokyo Metropolitan University)

#### **T32a-2-1 Automated Generation of Schematic Network Maps with Preservation of Main Structures**

*Tian Lan, Zhilin Li*

#### **T32a-2-2 Multivariate thematic mapping using fractal glyphs**

*Antoni Moore, Bin Jiang*

#### **T32a-2-3 Measuring the Street Layout Orientation Entropy of Cities in the Philippines**

*Homer Marquez Pagkalinawan*

#### **T32a-2-4 Cartometric and Participatory Mapping for Regional Boundaries Evaluation in Kaligensing, Purworejo, Indonesia**

*Sudaryatno, Bagus Wiratmoko, Raden Ramadhani Yuda*

### **T37-2 SDGs and Cartography 2 (practice)**

Room: Conference Room 1 (Plaza Heisei)

Datetime: Fri 19th July 16:40-18:00

Chair: *Menno-Jan Kraak* (University of Twente)

#### **T37-2-1 Sustainable Development Goals and Visualizing Small Island Developing States**

*Jessica Gosling-Goldsmith, Britta Ricker, Menno Jan Kraak*

#### **T37-2-2 Alternate thematic maps to visualize United Nations Sustainable Development Goal indicator data**

*Natasha Pirani, Britta Ricker, Menno Jan Kraak*

#### **T37-2-3 Employing GIS towards shaping a smart and sustainable future: a brief policy survey of global and Taiwan's efforts**

*Chih-Wei Chen, Ching-Yi Lin, Chine-Hung Tung, Hsiung-Ming Liao, Jr-Jie Jang, Kun-Chi Lai, Meng-Ying Li, Yin-Ling Huang*

### **T43-4 Mapping geospatial data**

Room: Conference Room 3 (Plaza Heisei)

Datetime: Fri 19th July 16:40-18:00

Chair: *Kaori Ito* (Tokyo University of Science)

#### **T43-4-1 Giving life to the map can save more lives. Wildfire scenario with interoperable simulations.**

*Walter David, Francesco Giannino, Duncan Heathfield, Antony Hubervic, Attila Aknai, Athanasios Sfetsos, Silvia Elena Piovan*

#### **T43-4-2 GIS-based hillshade representation combined with relative relief as pseudo shade to enhance micro-topography**

*Keiko Suzuki, Go Ishikawa*

#### **T43-4-3 Towards a new face for Planetary Maps: Design and Web-based Implementation of Planetary Basemaps**

*Andrea Nass, Nicolas Manaud, Stephan Van Gasselt, Trent Hare*

#### **T43-4-4 Estimation of three dimensional structure of forest and development of roots of trees using LiDAR data**

*Mamoru Koarai, Akane Rarikiyo, Wataru Watanabe*