



**ICC
2021**

Florence, ITALY

14 • 18 DECEMBER 2021



30th
International
Cartographic
Conference

Florence, Italy

PRELIMINARY PROGRAMME

WWW.ICC2021.NET



Monday, December 13

	Aula Magna	Room A101	Room A103	Room A105	Room A106	Room A209	Room A210
9:00 12:30		<i>Pre-Conference Workshop</i> Visualization of Dynamic Phenomenons and Processes on Web Maps	<i>Pre-Conference Workshop</i> Mapping the Ottoman Realm: Travelers, Cartographers and Archaeologists	<i>Pre-Conference Workshop</i> Geospatial approaches to combating Covid-19	<i>Pre-Conference Workshop</i> 24th ICA Workshop on Map Generalisation and Multiple Representation	<i>Pre-Conference Workshop</i> Sharing cartographic knowledge	<i>Pre-Conference Workshop</i> Disaster risk reduction (DRR) progress for cartography in Big Data era
14:00 18:45			<i>Pre-Conference Workshop</i> Map Design for Atlases			<i>Pre-Conference Workshop</i> Immersive Cartography / Cartography for Immersive Environments	<i>Pre-Conference Workshop</i> Geospatial Semantics

Tuesday, December 14

Salone dei Cinquecento	
15:00-18:45	Opening Ceremony

Wednesday, December 15

	Aula Magna	Room A101	Room A103	Room A105	Room A106	Room A209	Room A210
8:45 10:15		T01-1. Art in Cartography	T02-1. Atlases	T03-1. Cartographic Heritage Into the Digital Domain	T05-1. Cartography for Early Warning and Crisis Management	T06-1. Cognition in Geovisualization	T07-1. Education and Continuous Learning in Cartography
11:45 13:15		T01-2. Art in Cartography	T02-2. Atlases	T03-2. Cartographic Heritage Into the Digital Domain	T04-1. Cartography and Children	T06-2. Cognition in Geovisualization	T07-2. Education and Continuous Learning in Cartography
14:45 16:30		T08-1. Generalization and Multiple Representation	T09-1. Artificial Intelligence in Mapping	T03-3. Cartographic Heritage Into the Digital Domain	T04-2. Cartography and Children	T06-3. Cognition in Geovisualization	T07-3. Education and Continuous Learning in Cartography
17:00 18:45		T08-2. Generalization and Multiple Representation	T09-2. Artificial Intelligence in Mapping	T03-4. Cartographic Heritage Into the Digital Domain	T05-2. Cartography for Early Warning and Crisis Management	T6-4. Cognition in Geovisualization	T07-4. Education and Continuous Learning in Cartography

Thursday, December 16

	Aula Magna	Room A101	Room A103	Room A105	Room A106	Room A209	Room A210
9:00 10:45	National Mapping, National Geospatial and National Statistical Agencies Day of Collaboration and Information Sharing	T11-1. History of Cartography	T07-5. Education and Continuous Learning in Cartography	T13-1. Map Design	T15-1. Maps and Accessibility	T14-1. Map Production and Geoinformation Management	T10-2. Social Sensing and Visual Analytics
11:15 13:00		T11-2. History of Cartography	T02-3. Atlases	T13-2. Map Design	T15-2. Maps and Accessibility	T14-2. Map Production and Geoinformation Management	T10-3. Social Sensing and Visual Analytics
14:45 16:30		T11-3. History of Cartography	T12-1. Location Based Services and Ubiquitous Mapping	T13-3. Map Design	T17-1. Marine Cartography	T14-3. Map Production and Geoinformation Management	T16-1. Participatory Mapping
17:00 18:45		T11-4. History of Cartography	T12-2. Location Based Services and Ubiquitous Mapping	T13-4. Map Design	T20-1. Planetary Cartography	T14-4. Map Production and Geoinformation Management	T16-2. Participatory Mapping

Friday, December 17

	Aula Magna	Room A101	Room A103	Room A105	Room A106	Room A209	Room A210
8:45 10:15		T18-1. Mountain Cartography	T23-1. Toponymy in Cartography	T25-1. Cartography and Sustainable Development	T21-1. Spatial Data Infrastructure and Standards	T34-1. Use, User, and Usability	T22-1. Sensor- Driven Mapping
11:45 13:15		T18-2. Mountain Cartography	T23-2. Toponymy in Cartography	T25-2. Cartography and Sustainable Development	T19-1. Open Geospatial Data and Technologies	T34-2. Use, User, and Usability	T29-1. Mapping Urban Environments
14:45 16:30		T33-1. Augmented and Virtual Realities in Cartography	T24-1. Cartography and Public Health	T25-3. Cartography and Sustainable Development	T21-2. Spatial Data Infrastructure and Standards	T34-3. Use, User, and Usability	T22-2. Sensor- Driven Mapping
17:00 18:45		T33-2. Augmented and Virtual Realities in Cartography	T24-2. Cartography and Public Health	T25-4. Cartography and Sustainable Development	T19-2. Open Geospatial Data and Technologies	T34-4. Use, User, and Usability	T29-2. Mapping Urban Environments

Saturday, December 18

	Aula Magna	Room A101	Room A103	Room A105	Room A106	Room A209	Room A210
8:45 10:15		T32-1. Military Mapping	T28-1. Cartography in Digital Humanities	T17-2. Marine Cartography	T33-3. Augmented and Virtual Realities in Cartography		
11:45 13:15		T26-T36. Cartography, Privacy, Ethics, and Perspectives	T28-2. Cartography in Digital Humanities	T30-1. Theoretical Cartography	T35-1. Map Projections		



Tuesday, December 14

The Salone Dei Cinquecento In Palazzo Vecchio

• 15:00 - 18:45 •

Salone Dei Cinquecento, Palazzo Vecchio

Opening Ceremony

Chair

15:00 Welcome remarks

15:30 Remarks by invited Authorities

16:30 Remarks by the President of International Cartographic Association

17:00 Keynote speech of Dr. Simonetta Cheli – ESA

18:15 The President of Italian Association of Cartography closes the ceremony

18:45 Closing party - Cortile del Michelozzo

Wednesday, December 15

The School Of Humanities, University Of Florence

• 8:45 - 10:15 •

RoomA101

T01-1. Art in Cartography

Chair

The Atlas as (Exhibition) Space. Herbert Bayer: World Geographic Atlas, 1953

Magdalena Becker(1)

Across Edges: Art to Cartography; One Landscape to the Next

Darren Sears(1)

Direct Manipulations of Cartographic Space for Expressive Cartographies

Nick Lally(1)

Mapping the Skin and the Guts of Stories: a Dialog Between Conventional and Alternative Cartographies

Sébastien Caquard(1), Élise Olmedo

Mapping Tokyo Olympics 3.0: Archaeologies of the Future

Sharon Hayashi(1), Elina Lex

An individual journey within platial environments of flows

Aleksandra Stanczak(1), Antoni Moore

RoomA103

T02-1. Atlases

Chair

Cartography in the Social Media Era: a New Balance and Synthesis

Fraser, D R Taylor(1), Romola Thumbadoo, Alexander Wolodtschenko, Ilya Zaslavsky

Storytelling in Interactive Atlases - Following the Intrinsic Map-Centered Approach

René Sieber(1)



**Wednesday, December 15 • 8:45 - 10:15 •**

Creating an Atlas of the Anthropocene
Benjamin David Hennig(1)

Monograph - the Covid-19 Pandemic in Spain
Andrés Arístegui(1), Francisco Sánchez

Mapping Narrative Content and Structure in Online Atlases
Gareth Baldrice-Franklin(1)

Erwin Raisz' Atlases - Multi-Method Storytelling-Approaches for Cartographic Communication
Losang Eric(1)

Web Atlas That Recreates the Historical Memory of the Colombian Conflict From the Classrooms Based in History and Geography Concepts Using Geo-Technological Tools
Angélica María Peña Zambrano(1), Rafael Enrique González Castillo, Luz Ángela Rocha Salamanca

RoomA105**T03-1. Cartographic Heritage Into the Digital Domain****Chair**

"Hack the Map", a Digital Educational Program Inspired by Rigas Velestinlis' Charta of Greece (1796-7)
Maria Pazarli(1), Kostas Diamantis, Vasiliki Gerontopoulou

The Perczel Project (2007–2019)
László Zentai(1), Mátyás Márton, Gábor Gercsák

The Historical Geological Cartography: From Digital Archive to Webgis Environment
Marco Pantaloni(1), Fabiana Console, Maria Pia Congi, Renato Ventura

Paper and Pixels: Historic Maps as a Multifaceted Resource
Cameron Petrie(1), Rebecca Roberts, Junaid Jabbar, Hector Orengo, Marco Madella

The Cartographic Heritage of the University of Florence. Historical Maps of the Geography Library
Margherita Azzari(1), Camillo Berti

RoomA106**T05-1. Cartography for Early Warning and Crisis Management****Chair**

Mixed Reality Maps to Help Convey Disaster Information
Kevin Patrick Helzel(1), Alexander Klaus, Mathias Jahnke

Geo-Online Explanatory Data Visualization Tools as Crisis Management and Communication Instruments
Silvia Grandi(1), Anna Bernasconi

Hurricane and Waste Collection Simulations on Qgis for Improving Post-Hurricane Waste Collection
Anne Ruas(1), Quy Thy Truong, Serge Lhomme

Application of InSAR Satellite Method for Mapping of Active Landslides in Bulgaria - Opportunities and Perspectives
Mila Atanasova-Zlatareva(1), Hristo Nikolov, Lyubka Pashova

Risk Information Management in Support of UN Humanitarian Missions
Horst Kremers(1)





Wednesday, December 15 • 8:45 - 10:15 •

RoomA209

T06-1. Cognition in Geovisualization

Chair

Effect of Geospatial Uncertainty Borderization on Users' Heuristic Reasoning

Lorenzo Libertini(1), Ekaterina Chuprikova, Liqiu Meng

An Advanced Dynamic Visualization Method of Global Ocean Tide With Multi-Core Processor Based on Opengl

Hao Meng(1), Wei Ming Xu, Tian Yang Liu, Zhi Yuan Shi, Zhou Yang Dong

Visual Complexity and Memorability of MapsArzu Coltekin(1), Dario Oertle, Alzbeta Brychtova

Revealing Map Reading Strategies of Physical Geographic Maps

Marketa Beitlova(1), Stanislav Popelka

Thematic Mapping of Covid-19 Spread in Nigeria: a Tool for Pandemic Rapid Containment Measures

Oluwasegun Adebayo(1)

Spatio-Temporal Assessment of Surface Water Quality in an Agrarian Community, Sw Nigeria Using Globe Protocol

Akinola Shola Akinwumiju(1), Olawale Oluwafemi, Seyi Ogundeji, Ifedotun Abimbola

RoomA210

T07-1. Education and Continuous Learning in Cartography

Chair

How Are Maps Used in Research? an Exploratory Review of Phd Dissertations

Serena Coetzee, Sanet Carow(1), Lourens Snyman

Educational Uses of Cartography. an Example on the Use of Gis to Deal With Depopulation by Skill Processes

Javier Velilla Gil(1), Carlos Guallart Moreno, María Laguna Marín-Yaseli

Analysis of Historical Cartography and Data Presentation for an Educational Purpose: the Case of the Historical Centre of Vimercate

Dina Jovanovic(1), Daniela Oreni, Stefano Della Torre, Rossella Moioli

Extending the Cartographic Capabilities of Desktop Gis - Implementing Less Common Statistical Mapping Methods as Web Services Together With Students

Gertrud Schaab(1), Christian Stern

Cartographic Education at the University of Glasgow: Past, Present and Future

Tao Wang(1), Minghui Sun

• 11:45 - 13:15 •

RoomA101

T01-2. Art in Cartography

Chair

Ancient Thoughts and Electric Buildings

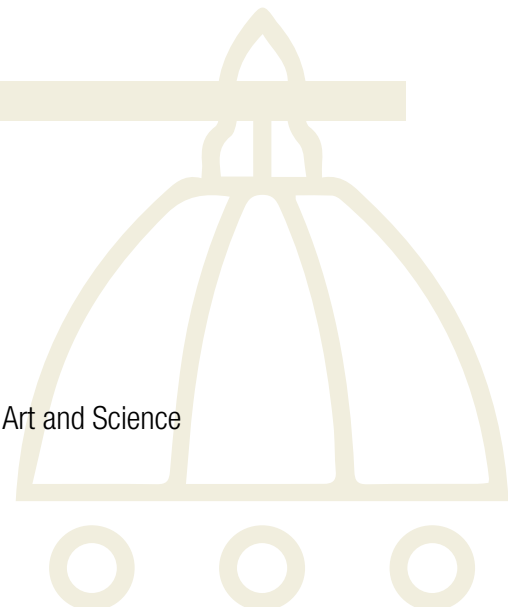
Michael Trommer Trommer(1)

A Sound-Strata Map of Port Hope

Taien Ng-Chan Ng-Chan(1)

Towards a Cartographic Renaissance: Leonardo'S Maps and Their Approaches to Art and Science

Alexander Kent Kent(1)



**Wednesday, December 15 • 11:45 - 13:15 •**

Aesthetics in Cartographic Epistemology

Chelsea Nestel Nestel(1)

Thematic Mapping With a Twist

Kenneth Field(1)

Design and Implementation of Narrative Map Based on Hand Scroll - an Example of Zheng He'S Voyage to the West
Jie Shen(1), Lufei Zhao, Nina Sun, Tengfei Chai

Data Visualization Design for Nsfj Joint Fund Management

Zhao Jin(1), Tao Wang, Peng Huang

RoomA103**T02-2. Atlases****Chair**

Serbian Atlases in the 19Th and Early 20Th Century

Jelena Glišović(1), Žarko Ilić

Mapping, Synthesis and Visualization of Czech Dialects

Vit Vozenilek(1), Martina Ireinova, Alena Vondrakova, Jakub Konicek

Bilingual Statistical Historical Atlas of Israel

Oren Raz(1)

Historical Atlas of Poland 2.0 - Over 140 Years of Joint Work of Historians and Cartographers

Katarzyna Slomska-Przech(1), Adrian Bajzer, Dawid Maciuszek, Tomasz Panecki

Czech Historical Atlas: Creation of a Web Map Portal

Petra Jílková(1), Jiri Krejci

Erwin Raisz Atlases - a Multi-Method Approach to Cartographic Communication

Eric Losang(1)

Austrianvineyards.Com - the World'S First Nationwide Information and Presentation System of All Wine Estates

Wieser Dominik(1), Karel Kriz

RoomA105**T03-2. Cartographic Heritage Into the Digital Domain****Chair**

A Never-Born Russian-Language Earth Globe in the Virtual Globes Museum

Dávid Gerzsenyi(1), Gábor Gercsák, Mátyás Márton

A New Interactive Gazetteer of Perczel'S Globe

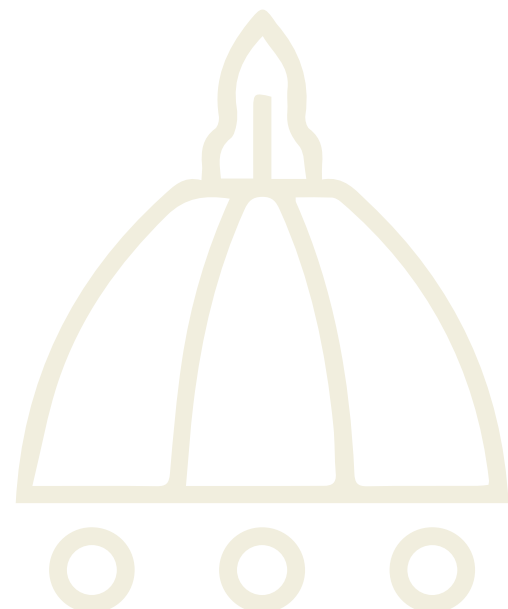
László Zentai(1), Zsuzsanna Ungvári, Gábor Gercsák, Márton Mátyás

Charles Perthées Maps of Palatinates: a Project of Digital Edition

Tomasz Panecki(1), Tomasz Królik

A New Tool to Follow the Changes of Geographic Names on Globes

Zoltán Kuris, Klaudia Rapcsán, Zsuzsanna Ungvári, Mátyás Gede(1)



**Wednesday, December 15 • 11:45 - 13:15 •**

Construction of an Old-Map Framework for Promoting Historical GIS Research and Education
Keiji Yano(1), Satoshi Imamura, Ryo Kamata, Muneyuki Natsume, Benjamin Lewis

New Approaches to Communicate and Educate Through Historical Maps
Milena Bertacchi Bertacchini(1), Laura Turchi, Patrizia Cremonini, Lorenza Iannacci, Annalisa Sabatini

RoomA106

Spatial Thinking in Cartography Teaching for Schoolchildren
Barbara Jordão(1), Sônia Castellar

A Generations View on Sdg - Using the Central Role of Maps
Markus Jobst Jobst(1), Georg Gartner

Geoliteracy, Cartology, and Active Mobile Mapping at School
Yaïves Ferland(1), Margot Kaszap

Children's Cartography: What Is a Map According to Children?
Heather Swienton(1), Alberto Giordano, Ronald Hagelman, Shadi Maleki
Heather Swienton(1), Alberto Giordano, Ronald Hagelman, Shadi Maleki

Limits of Gis Implementation in Secondary Education
Veronika Bernhäuserová(1), Lenka Havelková, Martin Hanus
Veronika Bernhäuserová(1), Lenka Havelková, Martin Hanus

Cartography as a Tool to Assess Spatial Skills in Children Aged 3-5 Years
Paola Zamperlin(1), Guenda Mangoni

RoomA209**T06-2. Cognition in Geovisualization****Chair**

How Users Interact With 3D Virtual Environments? Users' Behavior Evaluation in Participatory Urban Planning
Thibaud Chassin(1), Jens Ingensand, Guillaume Touya, Sidonie Christophe

Students' Strategies for Thematic Map Analysis
Lenka Havelková(1), Martin Hanus

Semantic Correlation Between Emojis and Feelings' Descriptions for Mapping Emotions Into the Urban Mobility Context
Gabriele Silveira Camara(1), Silvana Philippi Camboim, João Vitor Meza Bravo

Take That Flood: Does Your Perspective Matter?
Sara Irina Fabrikant(1)

Evaluation of Geovisualization Designs for the Cognition of Movement in Space and Time
Crystal Bae(1), Somayeh Dodge

Mapping Autistic Wayfinding in Urban Environments
Irma Castellanos, Florian Hruby(1)





Wednesday, December 15 • 11:45 - 13:15 •

RoomA210

T07-2. Education and Continuous Learning in Cartography

Chair

Novel Cartographical Designs for Blind and Partially Impaired Students in Kurdistan

Ashna Abdulrahma Zada(1)

How to Help the Statisticians Correctly Prepare Maps

Maciej Zych(1)

Visualisations of Lidar Data in an Educational Setting

Jana Ameye(1), Luc Zwartjes, Philippe De Maeyer, Mario Hernandez

Bottom-Up Approach for Cartography Body of Knowledge Design

Vit Vozenilek(1), Vaclav Talhofer

International Cartographic Education Progress: a Bibliometric Analysis of Iccs Literature

Tao Wang(1), Minghui Sun

Didactic Atlas of the National Geographic Institute of Spain

Ana Velasco Tirado(1), Celia Sevilla Sánchez, Noelia Esther Aguiar Rivero

• 14:45 - 16:30 •

RoomA101

T08-1. Generalization and Multiple Representation

Chair

Rebanker: Displacing Embankment Lines From Roads and Rivers With a Least Squares Adjustment

Guillaume Touya(1), Imran Lokhat

Supervised Learning for Automated Feature Selection in Road Network Generalization

Izabela Karsznia(1), Albert Adolf, Stefan Leyk

Horizontal Accuracy Assessment of a Recent Algorithm for Approximate a Surface to a Dem

Juan Francisco Reinoso-Gordo(1), Domingo Barrera, María Ibáñez, Eddargani Salah, Rocío Romero, Francisco Ariza-López

Theoretical and Practical Application of Wang-Müller Line Generalisation Algorithm

Tomas Straupis(1), Motiejus Jakstys

The Change and the Challenge of a National Geographic Database

Carlo Perugi(1)

RoomA103

T09-1. Artificial Intelligence in Mapping

Chair

Automatic Vectorization of Point Symbols on Archive Maps Using Deep Convolutional Neural Network

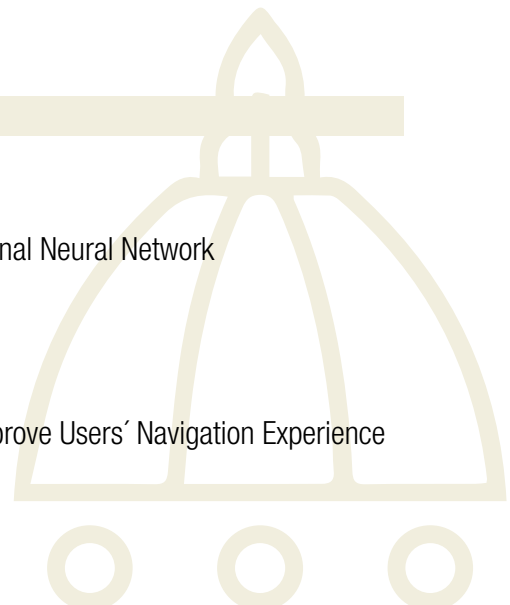
Gergely Vassányi(1), Mátyás Gede

Neural Map Style Transfer Exploration With Gans

Sidonie Christophe(1), Guillaume Touya, Samuel Mermet, Morgan Laurent

Combing Machine Learning Image Segmentation and Mixed Reality Design to Improve Users' Navigation Experience

Christian E Murphy(1), Guillermo Fernan Esquivel Tabares





Wednesday, December 15 • 14:45 - 16:30 •

Map as a Knowledge Base (Mapkb), a Free and Open Source Geospatial Semantic Technology System Prototype
Dalia Varanka(1)

Improving Map Text Detection and Recognition Through Data Synthesis
Samantha T Arundel(1), Trenton Morgan, Dennis Powon

Geoai for Topographic Mapping and the Intelligent National Map
E Lynn Usery(1)

RoomA105

T03-3. Cartographic Heritage Into the Digital Domain

Chair

Analysis of Urban Elements Orientations to Characterize the Spatial Extension of the Foundation of the Roman City of Amida

Jean-François Girres(1), Martine Assenat, Veysel Malit

Study of Old City Plan With Help of Historical Ontology of Urban Spaces - Legend Reconstruction

Katarzyna Slomska-Przech(1)

The Digital Cartographic Reconstruction of the 1897 'Mátra Guide' (Hungary)

Edina Hajdú(1), Márton Pál

Story From Realm of Maps in Regensburg

Medynska-Gulij Beata(1), Tillmann Tegeler, Hans Brauer, Krzysztof Zagata, Lukasz Wielebski, Ulf Brunnbauer

Using Cartographic and Archival Material to Approach Local History: an Educational Workshop About Lambrakis Case in Thessaloniki City of the '60S

Nopi Ploutoglou(1), Sofia Pavlidou, Maria Pazarli, Elpis Daniil

Developing 3D Models of Pre-War Warsaw Buildings With Spatial Data Integration

Beata Calka(1), Justyna Bak

RoomA106

T04-2. Cartography and Children

Chair

Mapping the Surrounding Environment by Pupils. Case Study: Primary School "Ismail Qemali" in Chair - Skopje

Bashkim Idrizi(1), Neriman Selimi

Presence of the School Cartography in Erwin Raisz'S Lifework

José Jesús Reyes Nunez(1)

Challenges in the Teaching of Cartography During the Covid-19 Pandemic: Use of Minecraft in the Remote Classroom Setting

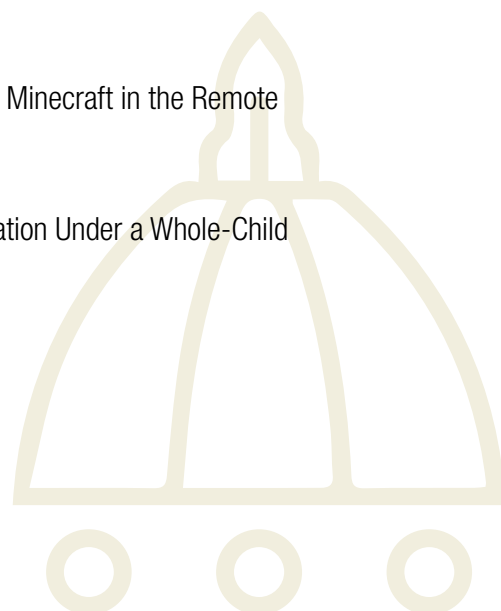
Carla Sena(1), Barbara Jordão

Children'S Graphic Representation as a Language and Its Role in Preschool Education Under a Whole-Child Approach

Paula Cristiane Strina Juliasz(1)

The Treasure Map of the Citizen Childhood

Jasmine Desclaux-Salachas(1)





Wednesday, December 15 • 14:45 - 16:30 •

RoomA209

T06-3. Cognition in Geovisualization

Chair

Map Evaluation Under Covid-19 Restrictions: a New Visual Approach Based on Think Aloud Interviews

Martin Knura(1), Jochen Schiewe

The Impact of Landmark Visualization Style on Expert Wayfinders' Cognitive Load During Navigation

Armand Kapaj(1), Sara Lanini-Maggi, Sara Fabrikant

The Influence of Socio-Cultural Factors on Perception & Cognition of Map Symbols

Bradley Denney(1), Amy Griffin, Zdenek Stachon

Do Authors Look at Their Maps in Different Way Than Common Readers? an Eye-Tracking Study

Marketa Beitlova(1), Stanislav Popelka(Ss), Karel Macku, Martin Konopka

Nudging Travelers to Favorable Routes: the Impact of Visual Communication and Emotional Responses on Decision Making

Stefan Fuest Fuest(1), Monika Sester, Amy Griffin

The Role of Emotions in Mental Maps

Mariam Gambashidze(1), Juliane Cron

The Sense of North

Veronika Flóra Kiss(1), Zoltán Farkas-Németh, Zsolt Gyozo Török

RoomA210

T07-3. Education and Continuous Learning in Cartography

Chair

Establishing a Cartographic Body of Knowledge

Terje Midtbø(1), Temenoujka Bandrova, Georg Gartner, Miljenko Lapaine, Jie Shen, Vít Vozenílek, Tao Wang

The System of Cartographic Didactic Aids for the Czech Lower Secondary Education and Its Implementation Into Geographical Teaching

Jan D Bláha(1), Petr Trahorsch

Introducing Web Mapping: a Workbook for Interactive Cartography and Visualization on the Open Web

Robert Roth(1), Carl Sack, Gareth Baldrice-Franklin, Yuying Chen, Richard Donohue, Lily Houtman, Tim Prestby, Robin Tolochko, Nick Underwood

The Adaptive Erasmus Mundus Cartography M.Sc. Program in the Covid-19 Pandemic From a Student's Perspective

Xiyu Wang(1), Jonathan Clark King

The Use of Virtual Environments in Geoscience Education

Hana Svedova(1), Petr Kubicek

• 17:00 - 18:45 •

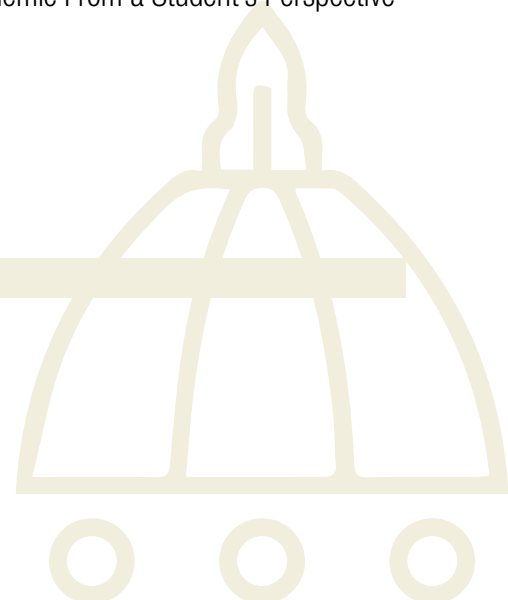
RoomA101

T08-2. Generalization and Multiple Representation

Chair

Please, Help Me! I Am Lost in Zoom

Guillaume Touya(1), Maria-Jesus Lobo, William Mackaness, Ian Muehlenhaus





Wednesday, December 15 • 17:00 - 18:45 •

Data Classification Methods for Preserving Spatial Patterns

Jochen Schiewe(1)

Modelling and Building of a Graph Database of Multi-Source Landmarks to Help Emergency Mountain Rescuers
Véronique Gendner(1), Marie-Dominique Van Damme, Ana-Maria Olteanu-Raimond

Deep Learning for Map Generalization: Towards a New Approach Using Vector Data

Martin Knura(1)

Can Graph Convolution Networks Learn Spatial Relations?

Azelle Courtial(1), Guillaume Touya, Xiang Zhang

RoomA103

T09-2. Artificial Intelligence in Mapping

Chair

Automatic Vectorization of Rectangular Manmade Objects: a Case Study Applying Opencv and Gdal on Uav Imagery
Márton Pál(1), Fanni Vörös, Béla Kovács

Computationally-Efficient Sequential Feature Extraction for Single Hyperspectral Remote-Sensing Image Classification

Andong Ma(1), Anthony Filippi

Inferring Implicit 3D Representations From Human Figures on Pictorial Maps

Raimund Schnürer(1), A Cengiz Öztireli, Magnus Heitzler, René Sieber, Lorenz Hurni

Personalized Landmark Sequence Recommendation Method Using Lstm-Based Network for Navigating in Large Hospitals

Litao Zhu Zhu(1), Shen Jie, Gartner Georg, Yingxu Hou

Quantitative Content Analysis of Maps on Twitter Using Network Visualization and Pre-Trained Machine Learning Models

Edyta Bogucka(1), Liqiu Meng

Piloting the Use of Machine Learning Methods for Automatic Mapping of Streams and Ditches in Finland

Christian Koski Koski(1), Pyry Kettunen, Justus Poutanen, Lingli Zhu, Juha Oksanen

RoomA105

T03-4. Cartographic Heritage Into the Digital Domain

Chair

Sediment Dynamics, Data Gaps and Technical Progresses, Three Difficulties to Overcome for Sediment Mapping, Application to the World Seabed Sediment Map

Thierry Garlan(1), Isabelle Gabelotaud, Elodie Marchès, Edith Le Borgne, Sylvain Lucas

Automatic Georeferencing of Topographic Map Sheets Using Opencv and Tesseract

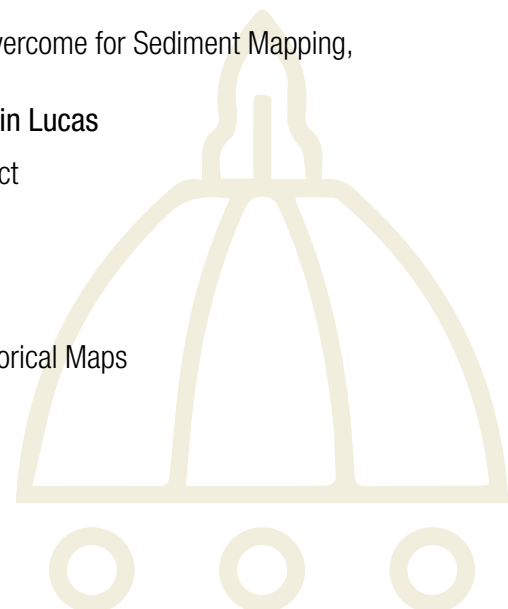
Mátyás Gede(1), Lola Varga

Mask-Rcnn Generalisation to Vectorise Surface-Type Objects of Old Maps

Valentin Árvai(1), Mátyás Gede

Utilizing Convolutional Neural Networks to Extract Road Features From Swiss Historical Maps

Chenjing Jiao(1), Magnus Heitzler, Lorenz Hurni



**Wednesday, December 15 • 17:00 - 18:45 •**

Modelling and Repeating Early Photographic Positions With Aerial Drones

Michael Hodgson(1), Silvia Elena Piovan

Towards the Large-Scale Extraction of Historical Land Cover Information From Historical Maps

Johannes Uhl(1), Stefan Leyk, Weiwei Duan, Zekun Li, Basel Shbita, Yao-Yi Chiang, Craig Knoblock

RoomA106**T05-2. Cartography for Early Warning and Crisis Management****Chair**

The Public Swiss Natural Hazard Portal for Warnings and Recommended Behaviour

Christophe Lienert(1), Franziska Angly, Barbora Neversil, Daniel Meier

A Combined Flood Risk Assessment With Swmm Hydrological Modelling and Ahp Based on Multi-Criteria Decision-Making

Yanping Li(1)

Preliminary Study on Knowledge Graph Construction Based on the Coupling Mechanism of Urban Disaster and Emergency Response

Jie Shen(1), Jingyi Zhou, Jijun Yang

Landslide Susceptibility Evaluation Based on Optimized Support Vector Machine

Jiping Liu(1), Rongfu Lin, Shenghua Xu, Yong Wang, Xianghong Che, Jie Chen

RoomA209**T6-4. Cognition in Geovisualization****Chair**

Designing Ai-Assisted Interactive Map Displays to Explore Spatial Information

Merve Keskin(1), Pyy Kettunen

Suitability of Colour Hue, Value, and Transparency for Geographic Relevance Encoding on Mobile Maps

Reichenbacher Tumasch(1)

Investigating the Effect of Display Pixel Density on the Minimal Legible Size of Cartographic Symbols

Florian Ledermann(1)

Empirical Study on Recognition of Spatial Patterns in Choropleth Maps Using Hexagonal Shaped Units

Izabela Karsznia(1), Izabela Golebiowska, Jolanta Korycka-Skorupa, Tomasz Nowacki

The Proposition of Parameters to Define the Smoothness and Continuity of Spatial Distributions of Phenomena

Raphael Gonçalves De Campos(1), Caio Paiva, Silvana Philippi Camboim

Eye-Tracking Comparison of Two Road Atlases

Popelka, Stanislav(1), Vondrakova, Alena, Beitlova, Marketa, Drahosova, Stanislava

Unlocking Cartography in the United Nations in the Era of Data for Action

Ayako Kagawa(1), Gakumin Kato, Mina Lee, Guillaume Le Sourd, Marco Lucafò, Oliva Martín Sánchez, Michael Montani





Wednesday, December 15 • 17:00 - 18:45 •

RoomA210

T07-4. Education and Continuous Learning in Cartography

Chair

A Collection of Student Maps for Teaching Multivariate Thematic Map Making - the Maps' Origin and Purpose

Gertrud Schaab(1), Sybil Adam, Serena Coetzee

Teaching on Natural Risks by Simulation in Minetest and Augmented Reality

Lecordxix François(1), Kumarasamy Sivakavi

Education 4.0 in Cartography: an Integrated E-Learning Materials Portal for Cartography and Digital Mapping Course

Abdul Rauf Abdul Abdul Rasam(1)

Making History Accessible to People With Visual Impairments Through Interactive Tangible 3D Models

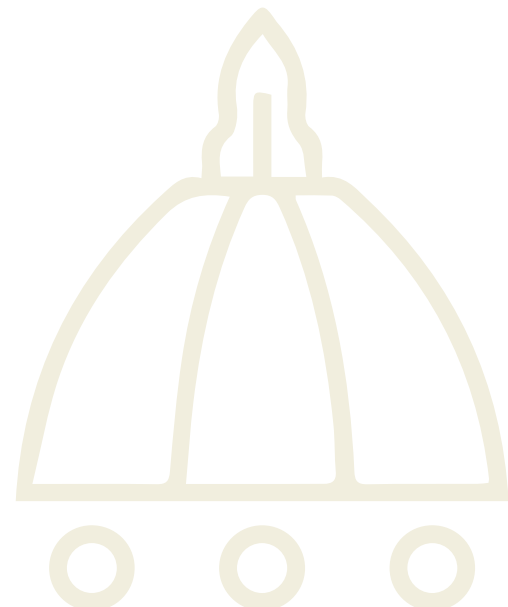
Jan Brus(1), Richard Lazna, Radek Barvir, Alena Vondrakova

A Survey of Criteria for Accredited Publications

Antony Cooper(1)

Approaches for infographics evaluation in maps

Jakub Koniček(1)





Thursday, December 16

The School Of Humanities, University Of Florence

Aula Magna

SPECIAL SESSION: National Mapping, National Geospatial and National Statistical Agencies Day of Collaboration and Information Sharing

• 8:30 am - 10:00 am •

NMA day – Transformation of National Organizations in the Digital Age

Opening session

Introductions of NMAs, NGAs, and NSOs and other international organizations

Our desired future and the transformation we need

Problem statement: the need to transition to meet demands and expectations considering the current landscape

Identifying the gaps for transforming national organizations.

Open discussion: inhibitors to transforming organizations in meeting the current and future demands.

• 10:30 am - 12:00 pm •

NMA day - the transition of NSDI to IGIF- Part 1 - improving on past achievements while acknowledging transformational requirements

The value of past NSDI efforts

Challenges in realizing NSDI for organizations in responding to current needs

Open discussion: the current state of national organizations (mapping, geospatial and statistical) in supporting national priorities and national circumstances

• 1:30 pm - 3:30 pm •

NMA day - the transition of NSDI to IGIF - Part 2 - the UN IGIF - a new framework supporting organizational transformation

The IGIF - Nine pathways for leadership to take positive steps

Experiences in applying the IGIF in six developing countries

Open discussion: how the IGIF offers opportunities for addressing national priorities according to national circumstances

• 4:00 pm - 5:00 pm •

NMA day - ICA's role in supporting national organizations to realize organizational transformation

Example of a successful collaboration – Mapping for a sustainable world

How does the ICA support future efforts in transforming organizations?

The role of ICA within the UN-GGIM – future opportunities to realize organizational transformation





Thursday, December 16 • 9:00 - 10:45 •

• 9:00 - 10:45 •

Room A101

T11-1. History of Cartography

Chair

Cartography Between Reality and Fiction: the Maps by Albert Herrmann (1886-1945) of Chott El-Djerid
Petra Svatek(1)

Jissoku-Yochizu (1821) the Small Scale Map of Japan Surveyed by Inoh Tadataka
Hiroshi Ota(1)

Places of Misery: Mapping Slavery of the Dutch East India Company (Voc), 1602-1799
Jeroen Bos(1)

Mediators of the Territory. Professional Profiles and Productions of the Regi Compassatori Della Dogana Di Foggia During the 18Th Century
Marco Petrella(1)

Room A103

T07-5. Education and Continuous Learning in Cartography

Chair

Mapwork.Education: Online Adaptive System for Cartographic Education
Martin Hanus(1), Lenka Havelkova, Veronika Bernhauserova, Kristyna Stolcova

Student Generated Digital Media and Community-Based Learning Within a Covid-19 Induced Landscape: Lessons From the Field
Nerhene Davis(1), Victoria Rautenbach

Map Use in Lessons: a Videostudy Findings
Kristyna Stolcova(1), Martin Hanus

On Developing Cartographic Terminology in African Languages
Cooper Antony, Serena Cotzee(1)

SDGS and Cartography, a Conceptual Connection
Rob Lemmens, Menno-Jan Kraak(1)

Room A105

T13-1. Map Design

Chair

What Do the General Public Think About Maps as Art?
William Cartwright(1)

Balancing Shape Distortions and Contiguity in Cartograms
Michael T Gastner(1), Simon Perrault, Chen-Chieh Feng

Scalebrewer: a Visual Design Tool for Graphical Customization of Map Scale
Meilin Liu(1), Xi Tang

Cartographic Styles Used in Spatial Planning Maps to Visualise Uncertain, Unfinished and Imagined Content
Katharina Henggeler(1)





Thursday, December 16 • 9:00 - 10:45 •

Graphic Map Load Measuring Tool – Development and Verification

Radek Barvir(1), Vit Vozenilek

Characterizing Storytelling in Covid-19 Cartographic Journalism

Timothy Prestby(1)

Room A106

T15-1. Maps and Accessibility

Chair

Perspectives About Implementation of Colour Codes on Maps Accessible to Blind People

Niédja Sodr  De Ara jo(1), Luciene Stamato Delazari, Amanda Pereira Antunes, Andrea Faria Andrade

Concept and Formalisation of Tactile Cartographic Variables

Yi-Rong Chen(1), Stephan Van Gasselt(2)

Thematic Tactile Cartography: Evaluating Tactile Mapping Techniques for Novel Applications

Harrison Cole(1)

Mapping Road Crossings for Visually Impaired People

Yuhao Jiang(1), Mar a-Jes s Lobo, Sidonie Christophe, Christophe Jouffrais

Room A209

T14-1. Map Production and Geoinformation Management

Chair

The Automated Map. Public Innovation for the Generation of the National Topographic Map of Spain

Adolfo Perez(1), Felisa Quesada, Alicia Gonzalez, Alfonso Boluda, Ana Maldonado, Alfonso De Tomas, Paz Navas, Santiago Prieto

Accessing Spatial Knowledge Networks With Maps

Markus Jobst Jobst(1), Georg Gartner

A Pragmatical Algorithm to Compute the Convex Envelope of Bathymetric Surveys at Variable Resolutions

Julian Le Deunf(1), Thierry Schmitt, Yann Keramoal

Towards a Smart Campus: From Basemaps to Sensors

Jan Wilkening(1), Rainer Sch ffner

Multiple Layer Symbol Design for Use With Internet Maps

Rex Cammack(1), Paul Hunt

Room A210

T10-2. Social Sensing and Visual Analytics

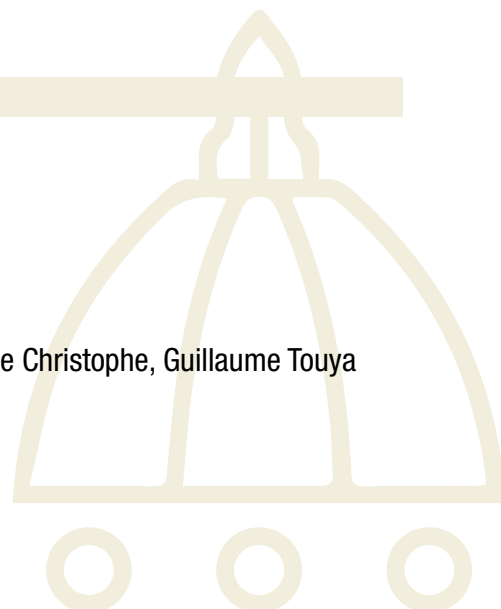
Chair

Gaining Overview With Transient Focus+Context Maps

Daria Hollenstein(1), Susanne Bleisch

Covid-19 Geoviz for Spatio-Temporal Structures Detection

Jacques Gautier(1), Maria Jesus Lobo, Benjamin Fau, Armand Drugeon, Sidonie Christophe, Guillaume Touya





Thursday, December 16 • 9:00 - 10:45 •

Approaches for Visualizing the Presence of Absence in Cartography

Anthony Robinson(1)

Visualizing and Evaluating the Geocoding Uncertainty in Social Sensing for Disaster Management

Debayan Mandal Mandal(1), Binbin Lin, Bing Zhou, Mingzheng Yang

• 11:15 - 13:00 •

Room A101

T11-2. History of Cartography

Chair

Were Portolan Charts and Portolani Made Upon Authentic Late Medieval Maritime Measurements? Example for the Adriatic Sea Basin Area

Tome Marelic(1)

Advertising in Mapping Products in Russia (1860-1930S)

Mikhail Orlov(1)

Renderings of the Adriatic Sea Coastline on Early Modern Age Nautical Charts in the Context of Their Navigational Applicability

Josip Faricic(1), Tome Marelic

Russian Topographic Mapping in Finland 1870-1917

Antti Jakobsson Jakobsson(1)

A Geological Hiking Map Curiosity From 1939

Gáspár Albert(1), Ábel Hegedüs

Room A103

T02-3. Atlases

Chair

The New National Atlas of Hungary – Volume Society

László Zentai(1), Gábor Gercsák, Károly Kocsis, Zsombor Nemerkenyi

The Atlas as Gazetteer – Facilitating Historical Research by Enriching Digital Place Names Databases With Digitized Atlas Indexes.

Eric Losang(1)

Climate and Vine - Representation and Communication of Spatio-Temporal Relationships in the Web Application Austrianvineyards.Com

Wieser Dominik(1), Karel Kriz

Virus Atlas Austria - Covid-19, Labour Market and Demography at a Glance

Florian Korn(1), Karel Kriz

Cartographic Storytelling: 150 Years of Swiss Official Statistics

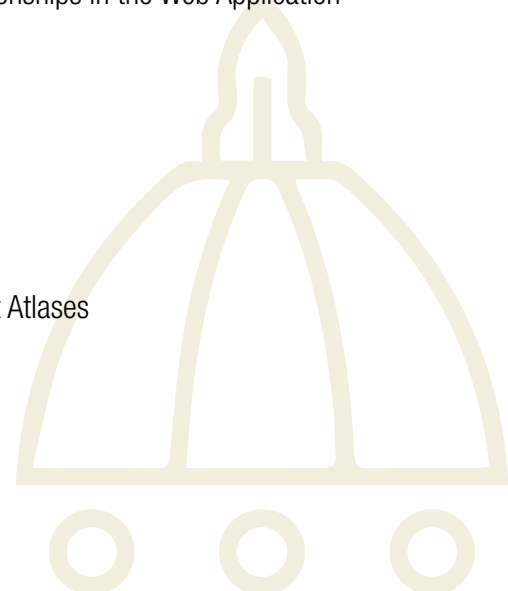
Olaf König(1)

The East Indian Water World 1709-1760: a Comparison of Two Dutch Manuscript Atlases

Ferjan Ormeling(1)

Historical Statistical Atlases

Thomas Schulz(1)





Thursday, December 16 • 11:15 - 13:00 •

Room A105

T13-2. Map Design

Chair

Design of an Atlas of Significant Natural Disasters

Denitsa Siteva(1), Silvia Marinova

The Carta Della Natura Project: the Case Study of Molise Region

Dora Ceralli(1), Lucilla Laureti, Chiara D'Angeli

Tectonics of Cartography

Jasmine Desclaux-Salachas(1), Lucile Bataille

Natural Disasters in Europe Within Years 2011 - 2020

Marek Hoffmann(1)

The Promise of Dasymetric Maps for Monitoring Progress Towards the United Nations Sustainable Development Goals

Britta Ricker(1), Menno Kraak, Robert Roth

Cross-Cultural Differences in Map Design Perception

Bibigul Zhunis(1), Georg Gartner, Silvia Klettner

Room A106

T15-2. Maps and Accessibility

Chair

Mapping of Accessibility I Norway

Sven Michaelis(1), Kathrin Böckelsack

Evaluation of Large Scale Online Maps

Michael P Peter Peterson(1)

Tactile Cartography in Latin America: Experience With Workshops

Carla Sena(1), Waldirene Carmo

Measuring Physical Access to Primary Health Care Facilities in Gambella Region (West Ethiopia)

Pier Lorenzo Fantozzi(1), Fabio Manenti, Giovanni Putoto, Giuseppe Baracca

3D-Printed Models of Czech Architectural Monuments for People With Severe Visual Impairment

Radek Barvir(1), Jan Brus, Alena Vondrakova

Room A209

T14-2. Map Production and Geoinformation Management

Chair

Digital Transformation in Topographic Databases

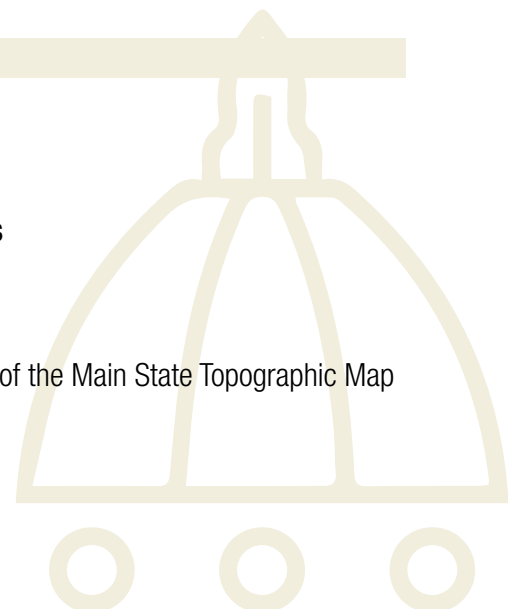
Gonzalo Moreno Vergara(1), Gema Martin-Asin Lopez, Lorenzo Camon Soteris

National High Resolution Land Cover and Land Use Information System

Julián Delgado Hernández(1), Nuria Valcárcel Sanz(2)

Automation of Quality Control of Digital Topographic Maps at the Scale 1:50 000 of the Main State Topographic Map in Ukraine

Nadiia Lazorenko-Hevel, Danylo Kin, Olexander Lets



**Thursday, December 16 • 11:15 - 13:00 •**

Change Only Updating the 1:25 000 Swiss National Map

Dominik Käuferle(1), Mark Wigley

The Project for Completing the Regional Geodatabase in Lombardia, Italy

Marco Scaioni(1)

Vector Large-Scale Overview Plan in a Swiss Cantonal Administration

Cristina M Iosifescu Enescu(1), Andreas Gantner, Simone Würsch

Room A210**T10-3. Social Sensing and Visual Analytics****Chair**

The Representation of Spatial Context by Emojis Within Location-Based Social Media

Eva Hauthal(1), Alexander Dunkel, Dirk Burghardt

The Impact of Scale on Spatial Connections: an Exploratory Analysis

Yihong Yuan(1)

Harvesting Social Media With Artificial Intelligence for Medical Threats Mapping and Analytics

Walter David David(1), Michelle King-Okoye, Alessandro Capone, Silvia Piovan

Cluttering Reduction for Interactive Navigation and Visualization of Historical Images

Evelyn Paiz, Mathieu Brédif, Sidonie Christophe(1)

• 14:45 - 16:30 •**Room A101****T11-3. History of Cartography****Chair**

Accuracy, Veracity, and Theological Truth in the 16Th Century Atlas Theatrum Terrae Sanctae

Ioana Zamfir(1)

A Last Map of Yet Many Firsts: Der Brandberg, 1:200,000

Imre Demhardt(1)

The Florentine Art of Cartography: Rosselli'S 'Fiorenza' and Early Map Printing in the Italian Renaissance

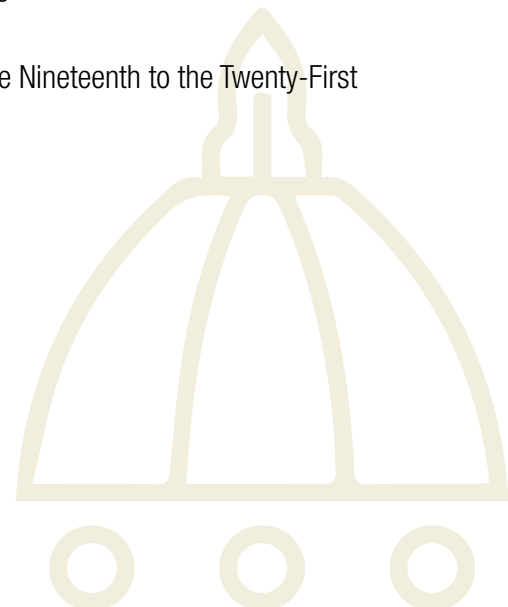
Zsolt Gyözö Török(1)

Mapping the Missionary World: 19Th Century Missionary Atlases With Special Regard to Justus Perthes' Production

Mirela Altic(1)

Intellectual Property and Maps: Legal Protections for Cartographic Works From the Nineteenth to the Twenty-First Century

John Swab(1)





Thursday, December 16 • 14:45 - 16:30 •

Room A103

T12-1. Location Based Services and Ubiquitous Mapping

Chair

Determining Traffic Congestion Utilizing a Fuzzy Logic Model and Floating Car Data (Fcd)

Maja Kalinic(1), Jukka Krisp

Driving and Navigation Habits of Austrian Drivers

Fanni Vörös(1), Georg Gartner, Béla Kovács

Pseudo Occlusion-Based 3D Trajectory Visualization for Indoor Ar Navigation Services

Xiangling Peng(1), Hayato Aoyagi, Arikawa Masatoshi, Ryo Sato, Akinori Takahashi

Can Indoor Navigation Service Incorporating Signs Support Spatial Learning?

Wangshu Wang Wang(1), Haosheng Huang, Georg Gartner

A Social Media-Based Framework for Tourist Behaviour Analysis and Characterization in Urban Environments

Francisco Porras Bernardez, Georg Gartner(1)

Room A105

T13-3. Map Design

Chair

Evaluating the Information Value of Tactile Maps

Jakub Wabinski(1), Albina Moscicka, Marta Kuzma

Concept for the Historic Parks' Tactile Maps Development

Albina Moscicka(1), Jakub Wabinski, Andrzej Araszkiwicz, Marta Kuzma, Damian Kiliszek

An Attempt to Define Perceptive and Sensitive Mapping Through Lived Space Experiments

Catherine Dominguès(1), Laurence Jolivet, Eric Mermet, Sevil Seten

Make Maps Great Again

Alejandro Guinea(1)

Base Maps of National Geoportals of Europe: Pragmatic and Stylistic Aspects

Rita Viliuviene(1), Giedre Beconyte

Which Mapping Technique for Population Density is Effective, Attractive, and Suggestive?

David Forrest(1), Beata Medyńska-Gulij

Room A106

T17-1. Marine Cartography

Chair

Automatic Cleaning of Outliers in Multibeam Bathymetric Data With Clustering Algorithm

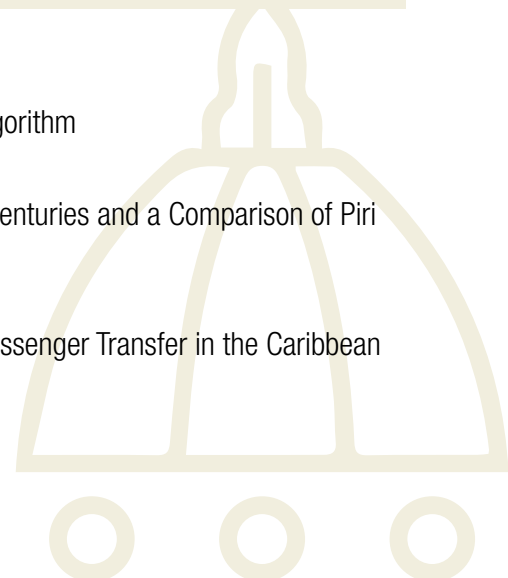
Yuan Wei(1), Shunjun Li, Shaohua Jin, Hongchao Ji

Overview of the Charts Representing Eastern Coast of the Adriatic Sea Through Centuries and a Comparison of Piri Reis Portolans With a Contemporary Chart Content

Ivana Racetin(1), Majda Ivic, Jelena Kilic, Katarina Rogulj

Cartographic Analysis for Managing Cruise Ship Destination Port-To-Attraction Passenger Transfer in the Caribbean Region

John Nyberg(1), Shachak Pe'Eri, Susan Slocum, Matthew Rice



**Thursday, December 16 • 14:45 - 16:30 •**

Emodnet Geology: Digital Geological Maps of European Seas

Andrea Fiorentino(1), Loredana Battaglini, Matteo Conti, Silvana D'Angelo, Carlo Innocenti

Dynamics and Trends in Content System Formation of Nautical Charts

Anastasia Gorevalova(1), Tamara Vereshchaka

Reliability of Bathymetric Data in Italian Nautical Charts and Encs.

Manuela Milli(1)

A Step Toward a Standardized Guide in Sailing the Sea: the Pilot'S Book Digital Upgrade

Roberto Manuzzo(1), Sonja Grosso, Riccardo Ansaldi, Ludovico Sturla, Marta Pratellesi

Room A209**T14-3. Map Production and Geoinformation Management****Chair**

Mapping the Avalanche Risk: From Survey to Cartographic Production. the Avalanche Bulletin of the Meteomont Service of the Alpine Troops Command

Aurora Alfina Ag Rapisarda(1), Andrea Marco Raf Pranzo

Mapping Mt. Ushba: Preparation for a New Alpine Club Map

Gröbe Mathias(1), Nikolas Prechtel, Benjamin Schröter, Dirk Burghardt

Testing Approaches to Visualize Land Cover/Land Use Changes in Time Series With Cloud-Based Microservice Tools

Jesse Friend(1), Mathias Jahnke

Dem'S Elevation Comparison by Surface Buffering

Francisco Javier Ariza-López(1), José Rodríguez-Avi, Juan Francisco Reinoso-Gordo

GIS-Mapping ADCP Backscatter Data to Support Environmental Studies

Paola Picco(1), Roberto Nardini, Maurizio Demarte

The new geospatial data of the Friuli Venezia Giulia Region (Italy): a geomatic challenge

Alberto Beinat, Massimiliano Basso, Elena Viero(1)

Room A210**T16-1. Participatory Mapping****Chair**

A Multicity Investigation on Fear of Crime

László Zentai(1), Andrea Pödör, Zalán Hum

Enabling Citizens to Refine the Location Accuracy of Cadastre Boundary Markers by Gamified Vgi

Mikko Rönneberg(1), Pyry Kettunen

Lessons Learned From a Vgi Initiative for Land Use Monitoring

Ana-Maria Raimon Olteanu-Raimond(1), Marie-Dominique Van Damme, Laurence Jolivet

A Climate Event Portal Co-Created by Citizen Scientists

Andreas Divanis(1), Liqiu Meng

Citizen Contribution to Lake Water Quality Observation: Simile Project Mobile and Web Applications

Daniela Carrion(1), Carlo Andrea Biraghi, Alberto Vavassori, Edoardo Pessina, Giorgio Zamboni, Gorica Bratic, Maria Antonia Brovelli



**Thursday, December 16 • 14:45 - 16:30 •**

Participatory Mapping and Swot in the Context of the Water-Food-Energy Nexus for Attaining Sdgs in Eastern Amazonia

Adryane Gorayeb(1), Gisleidy Tavares, Regina Da Silva, Thomaz Xavier, Christian Brannstrom

• 17:00 - 18:45 •**Room A101****T11-4. History of Cartography****Chair**

Using a Map to Reconstruct the Szekler Atlantis

János Jeney(1)

Translating the Earth: Practices, Tools, and Credibility in Eighteenth Century Cave Surveys

Johannes Mattes(1)

Decoding Spatial Formatting: the Analysis of the World Order Through Educational Atlases

Sofia Gavrilova(1), Jana Moser, Philipp Meyer, Sebastian Lentz

China'S Bronze Ritual Vessels: Maps Hiding in Plain Sight

Bruce Jones(1)

The Lack of Topographic Mapping and the Historical Problem of Land Demarcation in Brazil

Claudia Robbi Sluter(1), Andrea Lopes Iescheck, Andrea Flávia Te Carneiro, Daniela Regina Pontes, José Antônio Per Gediel

Room A103**T12-2. Location Based Services and Ubiquitous Mapping****Chair**

Comparative Study of Foreign Visitors' Perceptions of Places by Analyzing Visual Content of Photographs

Bochra Bettaieb(1), Yoshiki Wakabayashi

A Novel Mobile User Interface to Support Pedestrian Navigation Without Restricting the User to a Predefined Route

Haosheng Huang(1), Thomas Mathis, Robert Weibel

Sensor Based Extended Floating Bicycle Data (Xfbd) Analysis

Jukka Krisp(1), Maja Kalinic, Christian Röger, Andreas Keler

Movement Patterns of Electric Cargo Bike Commuters - First Insights From Field Experiments and Trajectory Analyses

Andreas Keler(1), Lisa Kessler, Fabian Fehn, Klaus Bogenberger

Room A105**T13-4. Map Design****Chair**

Perspectives on Making Cartographic Knowledge Accessible to Software Developers

Amy Griffin(1), Serena Coetzee, Petr Kubicek, Silvana Camboim, Dalia Varanka, Francis Harvey, Franz-Josef Behr, Jan Brus

Implementing Airline Route Map De-Cluttering Strategies

Paulo Raposo(1), Menno-Jan Kraak





Thursday, December 16 • 17:00 - 18:45 •

Automating Strip Mapping

Aileen Buckley(1)

Symbolising Spatially Coincident Temporal Data

Kenneth Field(1)

The Making of Mapping for a Sustainable World

Tanya Buckingham Andersen(1), Robert Roth, Gareth Baldrice-Franklin, Alicia Iverson, Chris Archuleta, Megan Roessler

Principles for Cartogram Design, Elicited From Manual Construction of Cartograms for the 50 U.S. States

Barry Kronenfeld(1)

Room A106

T20-1. Planetary Cartography

Chair

50 Years of Sensor-Based Planetary Cartography: Review and Perspectives

Andrea Nass(1), Stephan Van Gasselt, Trent Hare, Henrik Hargitai

Preliminary Geomorphometric Analysis of Selected Martian Scoria Cone-Like Features Using High-Resolution Dtms

Fanni Vörös(1), Balázs Székely

International Coordination of Planetary Coordinate System Recommendations and the IAU Working Group on Cartographic Coordinates and Rotational Elements

Brent Archinal(1), Wg On Cart Crd&Rot El

User Needs and Identification of Upcoming Challenges for the Application of Planetary Information Systems

Stephan Van Gasselt(1), Andrea Nass

Standards Proposal for 2021 to Support Planetary Coordinate Reference Systems

Trent Hare(1), Jean-Christophe Malapert

Topographic Mapping of the Mars Mc Quadrangles Using Hrsc Data

Elke Kersten(1), Klaus Gwinner, Gregory Michael, Alexander Dumke, Ralf Jaumann

A Mapping Symbols Library and Development Environment for Earth and Planetary Geologic Mapping

Alessandro Frigeri(1)

Room A209

T14-4. Map Production and Geoinformation Management

Chair

Using Thematic Mapping and United Nations Sustainable Development Goals Indicator Data to Investigate Environmental Factors Related to the Spread of Covid -19

Britta Ricker(1), Jennifer Anderson

Vector Tile Table Join Service (Vtjs) - Cartographic Support for the Communication of Ai Results

Markus Jobst Jobst(1), Sharon Chawanji, Georg Gartner

Abstraction and Reality. Dealing With...

Jana Moser(1), Christian Hanewinkel





Thursday, December 16 • 17:00 - 18:45 •

Online Collections of Vietnam War-Era U.S. Topographic Maps

Aileen Buckley(1)

Leveraging High-Performance Computing to Visualize Big Data on the Web – an Illustrative Case Study

Shane Loeffler(1)

Room A210

T16-2. Participatory Mapping

Chair

Integration of Quantitative Analysis and Local Community Involvement for Wildfire Risk Mapping: a Case Study From an Alpine Valley

Ingrid Vigna(1), Angelo Besana, Elena Comino, Alessandro Pezzoli, Davide Ascoli

Georeferencing Skills and Student Profile. Results From a Multivariate Regression Model

Gian Pietro Zaccomer, Maurizia Sigura(1)

Covid-19 Lockdown and Students' Changing Perception of Place: a Participatory Mapping Study in South Africa

Nerhene Davis(1), Kgothatso Langa, Coetzee Serena

Discovering Spatiotemporal Patterns on Data Quality Assessment in Collaborative Mapping: a Preliminary Study in an Area of Brazil

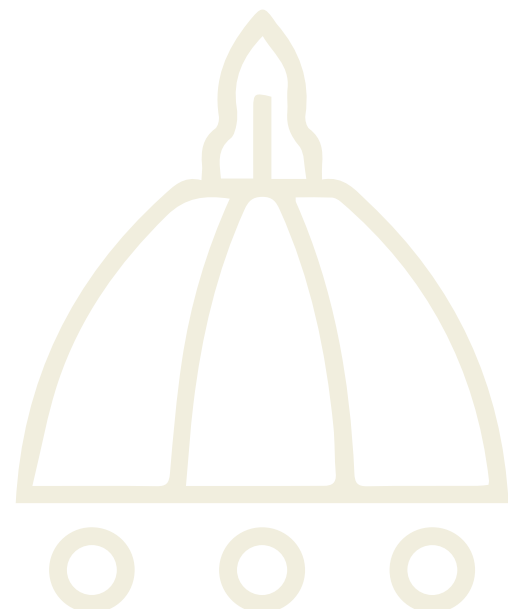
Elias Elias(1), Fabricio Amorim, Marcio Schmidt, Silvana Camboim

Enhancing Participatory Development in Morocco: Analyzing the Sketch Mapping Behavior of Men and Women and Integrating Paper and Digital Participatory Mapping Environments

Cora Stern(1), Matthew Rice

Cultural Heritage and Awareness: Differences Between Volunteered Geographic Information of Openstreetmap and an Official Cartography. the Case of Caserta in South-Italy

Giovanni Mauro(1), Maria Ronza





Friday, December 17

The School Of Humanities, University Of Florence

• 8:45 - 10:15 •

Room A101

T18-1. Mountain Cartography

Chair

Route Planning on Orienteering Maps With Least-Cost Path Analysis

Gáspár Albert(1), Zsófia Sárközy

Maps of First Orienteering Events

László Zentai(1)

Presenting Multilevel Environment on Orienteering Maps

Dusan Petrovic(1)

Mapant Spain: an Automatically Generated Orienteering Map for Spain

Jesús María Garrido Sáenz De Tejada(1), Manuel Jurado Alonso, Agustín Caballero Belda, Javier Arufe Varela, Jesús Moreno Jabato

Focus on Orientation to Represent Terrain

Gene Trantham(1), Patrick Kennelly

Large-Scale Topographic Mapping Issues in Vgi and Open Geospatial Data

Benedikt Hajek Hajek(1), Karel Kriz

Room A103

T23-1. Toponymy in Cartography

Chair

Representation of Minority Names on Maps: the Case of the Polish Minority in the Tesin Region, Czechia

Premysl Macha(1)

Dual Naming as a Mechanism to Recognize Multiple Identities; Casablanca Or Ad-Dar Al-Bayda

Malak Alasli(1), Gábor Gercsák

Let's Name It Together: Vgi, Social Media and Local Heritage in Traditional Toponyms Research

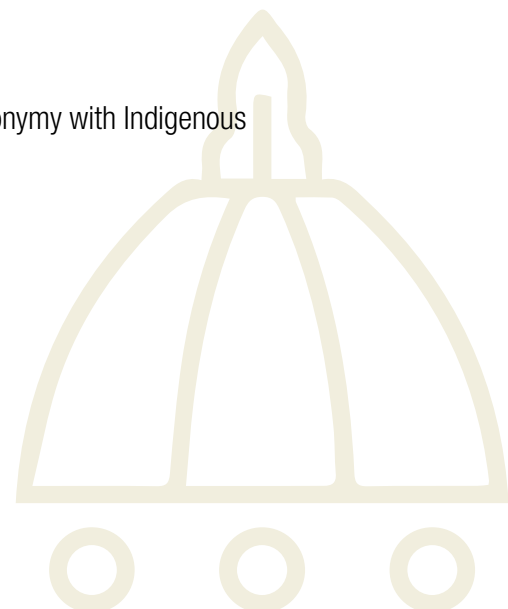
Kamil Niescioruk(1)

Indigenous Place Names in Toponymical Strata on the Turtle Island

Yaïves Ferland(1)

The Importance of Contemporary and Historical Indigenous Cartography and Toponymy with Indigenous Contributions to Euro/American/Canadian Cartography

Daniel G Cole (1), E Richard Hart



**Friday, December 17 • 8:45 - 10:15 •****Room A105****T25-1. Cartography and Sustainable Development****Chair**

Toward a New Ica Research Agenda

Liqiu Meng(1)

Improving Land Loss Modelling Through Incorporating Neighborhood Scale Effects

Heng Cai(1)

Mapping the Disparities of Community Resilience to Natural Hazards in the United States

Lei Zou(1)

Urban Policy Observatory Programme for Sustainable Cities and Communities Mapping in Poland

Dariusz Dukaczewski(1)

Cartography and Pilgrimage Trails. Tradition, Modernity, and Tourism

Cinzia Podda(1), Paolo Secchi, Milena Bertacchini

The Sustainable Tourism Organization of Rural Spaces. the Island of Sardinia in the Era Of

Silvia Battino Battino(1), Brunella Brundu

Room A106**T21-1. Spatial Data Infrastructure and Standards****Chair**

Ogc Api Features Html-Output as a Feature Dashboard

Lassi Lehto(1), Jaakko Kähkönen

Analysis of Infrastructural Forest Data With Gis-Tools

Ekaterina Podolskaia(1)

Implementing Base Data Set Custodianship - South Africa

Maroale Chauke Chauke(1), Nicolene Fourie, Vutomi Ndlovu, Yvonne Moema

Interoperability at the Core Strategic in the Spatial Data Infrastructure of the Service Aerophotogrametric, Chilean Air Force

Joselyn Robledo(1)

The Inspire Harmonisation: the Geological Map of Italy at 1:100,000 Scale

Marco Pantaloni(1), Valentina Campo, Maria Pia Congi, Gennaro Maria Monti, Paolo Primerano, Renato Ventura

Room A209**T34-1. Use, User, and Usability****Chair**

Evaluating a Location-Based Game to Support Citizens' Situated Reflection on History: a Mixed Method Approach

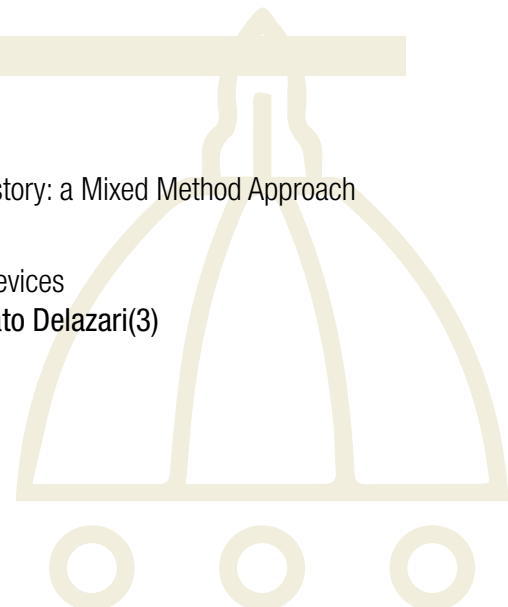
Catherine Jones(1)

Selection of Usability Heuristics to Evaluate Digital Maps Accessed on Different Devices

Vinícius Emmel Martins(1), Marcio Augusto Reolon Schmidt(2), Luciene Stamato Delazari(3)

A Set of Criteria for Evaluating Map Application Design in a Mobile Environment

Marc Schulz(1), Julian Huiber, Temenoujka Bandrova



**Friday, December 17 • 8:45 - 10:15 •**

Identifying Map-Reading, Map-Using, and Map-Generating Tasks in a Crowdsourcing Context

Claudia Robbi Sluter(1), João Vitor Meza Bravo

Towards Reproducible User Studies and Behavioral Experiments for Cartography With the Stimsrv Framework

Florian Ledermann(1), Georg Gartner

How Do People Make Decisions With/Without Smartphones While Walking in the City?

Kaori Ito(1), Asahi Maeda, Kota Katsumata, Seiya Takayanagi

Room A210**T22-1. Sensor-Driven Mapping****Chair**

Application of Uas for the Purposes of Landslide Mapping in Bulgaria - a Case Study of the Thracian Cliff Landslide, Northern Bulgarian Coastal Zone

Lyubka Pashova(1), Mila Atanasova-Zlatareva, Hristo Nikolov, Grigor Nikolov

Automatic Mapping of Traffic Signs

Bence Dusek, Mátyás Gede(1)

Abandoned Landscapes - Possibilities of Their Identification by Application of Map Data and Aerial Images in Conditions of Slovakia

Daniel Szatmári(1), Monika Kopecká, Ján Feranec, Tomáš Goga

Satellite Mapping of Urban Expansion and Landscape Changes in Beijing, China: a Longitudinal Study

Xiaojun Yang(1), Ting Liu

• 11:45 - 13:15 •**Room A101****T18-2. Mountain Cartography****Chair**

The Effect of the Cold War Era on Maps for Public Use in the Eastern Bloc Countries: Tourist Maps

László Zentai(1), Gábor Gercsák

Combining Multiple Shaded Reliefs With Hypsometric Colouring and Digital Orthophotos Using Free and Open-Source Software

Adam Vinkovic(1), Robert Zupan, Stanislav Franges, Damir Medak

Shadows Eclipse Relief Shading

Patrick Kennelly(1), Gene Trantham

Upgrade of Existing Algorithms for Creating Contour Lines on Topographic Maps in Karst Surface

Neza Ema Komel(1), Dusan Petrovic

Mountain Faces

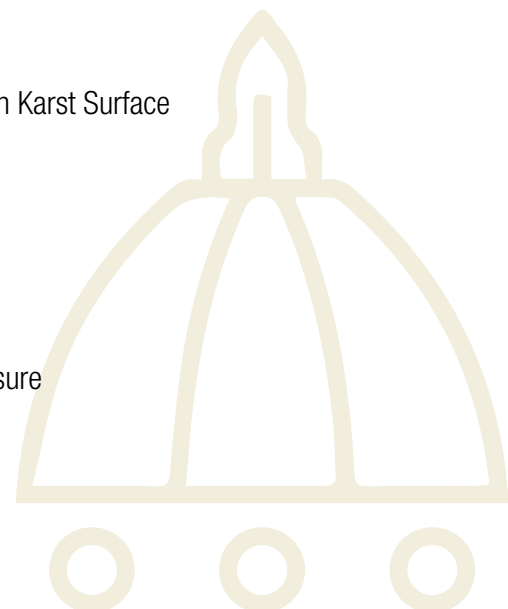
Stephan Wondrak(1)

Geomorphological Innovation Through Advances in Geovisualisation

Antoni Moore(1), Mike Smith

Optimal Generalization of Digital Elevation Model Constrained by Granularity Measure

Timofey Samsonov(1)



**Friday, December 17 • 11:45 - 13:15 •****Room A103****T23-2. Toponymy in Cartography****Chair**

Spatio-Temporal Analysis of Place-Naming Dynamics in Former West Prussia From 1772 to 2020

Ihor Doroshenko(1), Francis Harvey

Place Names in Spanish Republican Life Stories: Spatial Patterns in Locations and Perceptions

Laurence Jolivet Jolivet(1), Carmen Brando, Catherine Domingùes

Hungarian Place Names From a Moroccan Perspective

Malak Alasli(1)

Russian School of Toponymical Cartography

Andrey Herzen(1), Olga Herzen, Yuliana Gordova

The Place Names of the Aragonese Maps. Interpretative Hypotheses, Landscape Readings and Methodological Proposals

Silvia Siniscalchi(1), Fernando La Greca, Pierluigi De Felice

Room A105**T25-2. Cartography and Sustainable Development****Chair**

Georeferenced Cartography and Landscape: the Protection of the Monumental Olive Heritage

Teresa Amodio(1)

Mapping and Characterizing Animals' Places of Interest in Forest Environment

Laurence Jolivet Jolivet(1), Florian Masson, Sonia Saïd

Geodesign as a Support for Proposing Actions to Fulfil the Sustainable Development Goals

Ana Clara Moura(1), Fabiana Vieira, Camila Morais

Geodiversity Mapping of the Bakony–Balaton Unesco Global Geopark, Hungary

Márton Pál(1), Gáspár Albert

Historical Cartography and Sustainable Tourism Development. Reconnecting Trento and the Fersina Stream Through the Retrieval of Environmental and Cultural Heritage

Aurora Alfina Ag Rapisarda(1), Carolien Fornasari

Development of a Specialized Topographic Map of Environmental Protection Using the Example of Bog Massifs

Tamara Vereshchaka, Irina Kurbatova, Anna Ivanova(1), Alexei Stepanchenko

Room A106**T19-1. Open Geospatial Data and Technologies****Chair**

Soviet City Plans and Openstreetmap: a Comparative Analysis

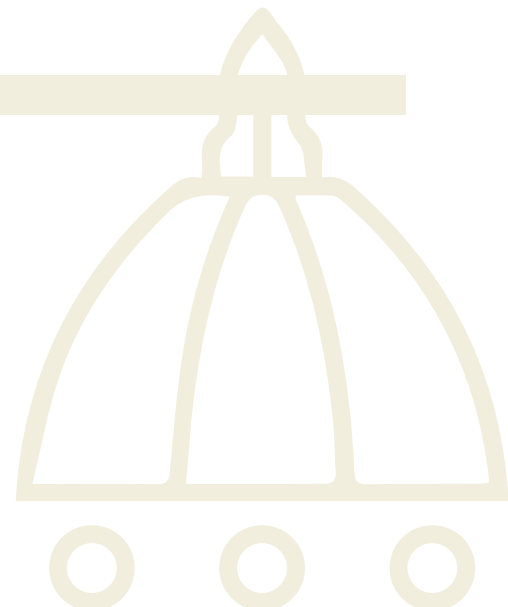
Martin Davis(1), Alexander Kent

Web Maps of Regional Attractiveness

Otakar Cerba(1), Jan Macura, Karel Charvát, Viktorie Sloupová

Web Technologies in Cartographic Support for Geological Exploration

Dmitriy Loginov(1)





Friday, December 17 • 11:45 - 13:15 •

Development of Open Geoinformation Resources in Russia

Elena Martynova(1)

Frmod, a Python Tool for Statistical Landslide Susceptibility Assessment

Dávid Gerzsenyi(1)

Room A209

T34-2. Use, User, and Usability

Chair

Finite Mixtures of Normal Distributions in the Study of the Error in Altimetry

Rodríguez-Avi José(1), Francisco Javier Ariza-López

Assessing Legend Designs for Coordinated and Multiple Views Geovisualizations

Izabela Golebiowska(1), Tomasz Opach, Arzu Çoltekin

Ucd Techniques Applied to the Design of Interfaces for Integration Between Expert System and Gis to Define the Directive of Transmission Lines

Renan Daros(1), Luciene Delazari, Daniel Dos Santos, Ana Carolina Lopes

Cartographic Optimization of Real-Time Satellite Visualization Orbits

Shlesha Acharya Acharya(1)

Empirical Evaluation of Four-Variate Thematic Maps for Expert Users

Jolanta Korycka-Skorupa(1), Izabela Golebiowska

How do Decision Makers Interact With Geospatial Data? an Eye Tracking Study

Jessica Hepburn(1), David Fairbairn, Philip James, Alistair Ford

Room A210

T29-1. Mapping Urban Environments

Chair

Mapping the Impact of Urban Proximity on Population Dynamics: a Study of 615 Peri-Urban Villages of India

Ankit Sikarwar(1), Aparajita Chattopadhyay, Ritu Rani

Upgrading Spatiotemporal Demographic Data by the Integration of Detailed Population Attributes

Toshihiro Osaragi(1), Ryo Kudo

Exploring the Differences Between Tourists and Locals in Urban Settings Through Multi-Labeled Geotagged Photos: the Case of Tokyo

Ahmed Derdouri(1), Toshihiro Osaragi

Quantifying the Complexity of Road Intersections Using Open Data of Traffic Accidents - Insights From a Case Study in Munich

Andreas Keler(1), Jukka Krisp

Quantitative, Orderly and Qualitative Visualisation of Urban Environment

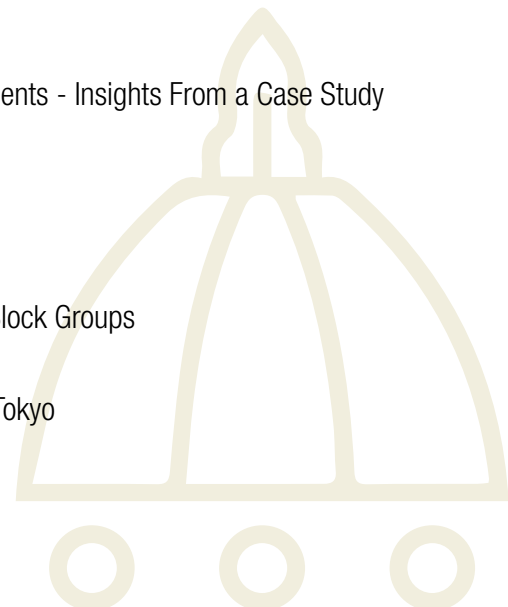
Medynska-Gulij Beata(1), Elzbieta Bielecka

A Spatial Analysis of Crime and Neighborhood Characteristics in Detroit Census Block Groups

Esther Amoako Amoako(1)

Location of Art Gallery in Urban Areas: a Gis Based Analysis in Shinagawa Ward, Tokyo

Yuta Tsuneizumi(1), Kaori Ito, Seiya Takayanagi





Friday, December 17 • 14:45 - 16:30 •

• 14:45 - 16:30 •

Room A101

T33-1. Augmented and Virtual Realities in Cartography

Chair

Implementing Augmented Reality (Ar) in Tourism

Iva Cibilic(1), Vesna Posloncec-Petric, Kristina Tomic

Classification of Dynamic Cartographic Symbols Applied to Augmented Reality (Ar) Systems

Fabricio Rosa Amorim(1), Marcio Augusto Reolon Schmidt

Exploring and Transforming Spaces Through High-Dimensional Gestural Interactions

Markus Berger(1)

3D Printed Mountain Area With Augmented Reality for Education Purposes

Dobrin Petkov(1)

Re-Building a Historical Cityscape With Virtual Reality

Robert Schmidt(1), Stefan Sauer, Jan Wilkening

Research on Neural Style Transfer Method for the Expression of Historical and Cultural Characteristics of 3D Virtual Scenario

Shuai Hong(1), Jie Shen, Meng Wang, Ni Sun

Room A103

T24-1. Cartography and Public Health

Chair

Spatial Distribution Shift of Creative Industries During Covid 19 Pandemic

Netek Rostislav(1), Jakub Konicek

Unequal Geographies of the Italian Tertiary Education System. Mapping the Disparities at Regional Scale

Giorgia Iovino(1)

Bivariate Representation of Public and Private Drinking and Wastewater Infrastructure

Georgianna Strod Strode(1), Victor Mesev

Where and Why There: Location Analytics of Routine Occurrences (Laro) With a Case Study on Traffic Accidents

Yanan Wu(1), May Yuan

Visualizing Spatiotemporal Epidemic Clusters on a Map-Based Dashboard: a Case Study of Early Covid-19 Cases in Singapore

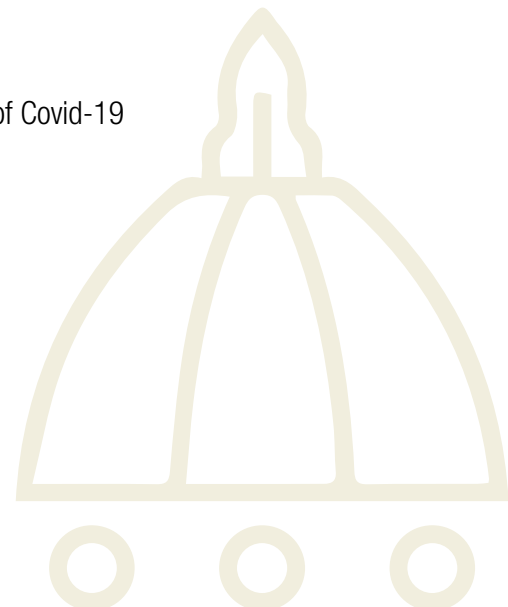
Hui Zhang(1), Chenyu Zuo, Linfang Ding

Modelling and Visually Analyzing the Spatio-Temporally Dynamic Transmissibility of Covid-19

Angela Yao(1), Xuebin Wei, Hao Yang

Interactive Map of Coronavirus Spread in Croatia

Robert Zupan(1)





Friday, December 17 • 14:45 - 16:30 •

Room A105

T25-3. Cartography and Sustainable Development

Chair

Routing on Geospatial Reference Information for Transport Networks of Spain

Cristina Calvo(1), Alicia Gonzalez, Angel Exposito

Synthesis of Geospatial Database and Interdisciplinary to Achieve Nsds for Downtown Alexandria, Egypt Vision 2030

Mohamed Soliman(1), Tomoyuki Usami, Satoshi Imamura, Keiji Yano, Hrishikesh Ballal, Abbas Mohamed Abbas, Tharwat Abdel Fattah, Sameh El-Kafrawy, Hossam El-Sayed, Amr El-Shafie

Forest in Military Through Cartography: the Case of the Mccrady Training Base

Silvia Elena Piovan(1), Michael Edward Hodgson, Marco Filippini, Ludovico Maurina

Measuring Closest Water, Sanitation, and Hygiene Facilities in Unhoused Communities of Los Angeles, Usa

Lourdes Johanna Avelar Portillo(1)

Mapping the Balance Between Grain Supply and Demand Globally - Gis -Based Transport Accessibility

Ossi Kotavaara(1), Terhi Ala-Hulkko, Maija Toivanen, Anita Poturalska, Marton Magyar, Pekka Kinnunen

Definition of Headwater Catchment Boundaries

Petr Kavka(1), Ludek Strouhal, Jiri Cajthalm

Room A106

T21-2. Spatial Data Infrastructure and Standards

Chair

Updating of Digital Topographic Maps in the New National Spatial Coordinate System: Case Fergana Valley in Uzbekistan

Dilbarkhon Fazilova(1), Hasan Magdiev

Making Progress in Determining Quality: Positional Accuracy of the New 1:25,000 Scale Digital Cartography

Barbara Cubillos(IgmCI), Ángela Ortíz, Germán Aguilera, Sergio Rozas, Claudio Reyes, Ignacio Parada, Carlos Arriaza, Wilfredo Rubio, Patricio Gallardo, Héctor Nuñez

Investigations Towards Enabling a Web-Based Environmental Geospatial Information System (Web-Egis) in Envidat

Ionut Iosifescu Enescu(1), David Hanimann, Dominik Haas-Artho, Marius Rüetschi, Dirk Karger, Gian-Kasper Plattner, Martin Hägeli, Rebecca Buchholz, Lucia De Espona, Niklaus Zimmermann, Loïc Pellissier

Mapping in Words: Standardizing Cartographic Terminology

Serena Coetzee(1), Amy Griffin, Barend Köbben, Petr Kubicek, Francis Harvey, Dalia Veranka, Silvana Camboim, Franz-Josef Behr, Reese Plews, Harold Moellering, Terje Midtbo

CARG Geological Database: New Layers, New Data

Loredana Battaglini(1), Roberta Carta

Room A209

T34-3. Use, User, and Usability

Chair

Forensic Mapping in a Civil Proceeding in South Africa

Peter Schmitz(1)

Displaying One'S Living Space as Used and Perceived During Lock-Down in a Sensitive Map Approach

Laurence Jolivet Jolivet(1), Catherine Dominguès, Éric Mermet, Sevil Seten



**Friday, December 17 • 14:45 - 16:30 •**

Interactive Web Maps: Usability Heuristics Proposal

Juliana Orro Mar Marquez(1), Tiago Silva, Paulo Meirelles

Making Sense of Coronavirus News Map: a Multiple Sorting Approach

Johanna Meyer(1), Danae Stanton Fraser, Julie Barnett

Adaptation of Maps to Pupils With Severe Visual Impairments

Alena Vondrakova(1), Katerina Becicova, Radek Barvir, Jan Brus

An Analyze of Spatial Newspapers in a Certain Period

Pinar Sarin(1), Necla Ulugtekin

An exploratory digital environment for learning about southern African pre-colonial urbanism - a usability study

Brenda Maina, Serena Coetzee(1), Stefania Merlo, Victoria Rautenbach

Room A210**T22-2. Sensor-Driven Mapping****Chair**

Remote Sensing Based on Time Variance Control in Configurable Area Partitioning

Stefano De Falco(1)

Spatial and Temporal Evaluation of Perennial Vegetation Distribution in the Arid Areas Surrounding North Horr City

Velia Bigi(1), Ingrid Vigna, Elena Comino

Waterloo Building Dataset: a Large-Scale Very-High-Spatial-Resolution Image Dataset for Building Rooftop Extraction

Hongjie He(1), Zijian Jiang, Weikai Tan, Yuwei Cai, Sarah Narges Fathollahi, Kyle Gao, Hongzhang Xu, Bingxu Hu, Liyuan Qing, Jonathan Li

Impact of Neighbourhood Selection Methods on Mobile Lidar Data Classification Using Machine Learning Algorithms

Salem Wagih Sale Morsy(1), Mahmoud Mohamed, Adel El-Shazly

Precision Mapping of Apple Proliferation Using Multi- and Hyperspectral Data

Ben Mcleod(1), Ekaterina Chuprikova, Abraham Mejia-Aguilar, Dana Barthel, Katrin Janik, Roberto Monsorno, Liqiu Meng

• 17:00 - 18:45 •**Room A101****T33-2. Augmented and Virtual Realities in Cartography****Chair**

Changes of Locomotion Speed Affect Distance Estimations in Virtual Reality

Julian Keil(1), Annika Korte, Dennis Edler, Denise O'Meara, Frank Dickmann

Spatio-Temporal Comparison of Agent Trajectory With Evacuation Routes in Real and Virtual Environments

Dajana Snopková(1), Ondrej Uhlík, Ondrej Kvarda, Zdenek Stachon, Petr Kubíček

Physical-Informational Space Visualization Based on Mixed Reality

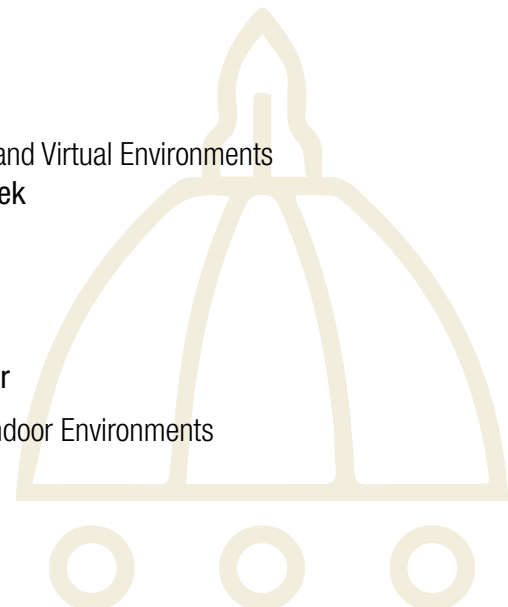
Shengkai Wang(1), Bing Liu

Designing Maps for Bicycling Simulator Studies - Three Practical Approaches

Andreas Keler(1), Patrick Malcolm, Georgios Grigoropoulos, Klaus Bogenberger

Evaluating Distances Using Pictorial Symbols in Augmented Reality Systems for Indoor Environments

Luciene Delazari(1), João Victor Gomes, Marcio Schmidt





Friday, December 17 • 17:00 - 18:45 •

Room A103

T24-2. Cartography and Public Health

Chair

Modeling Severe Acute Respiratory Syndrome Coronavirus 2019 (Sars-Cov-19) Incidence Across Conterminous Us Counties: a Spatial Perspective

Olawale Oluwafemi(1)

Will Cognitive Mapping Be Beneficial to Alzheimer'S Disease?

May Yuan(1)

Bridging Research and Dissemination in the Covid-19 Era: a Webgis Dashboard for the Autonomous Province of Trento (Italy)

Nicola Gabellieri(1), Francesco Geri, Andrea Marco Raf Pranzo, Paolo Zatelli(7)

The Importance of Cartography in Covid-19 Pandemic Mapping

Hatice Atalay(1), Necla Ulugtekin

Creating a Dynamic Map Template for National Scale Malaria Treatment Planning in Zambia

Matthew Heaton(1)

Inland Water Hydrographic Survey for Mapping and Scientific Research

Enrico Zanone, Erik Biscotti, Aldo Monaca, Marco Pucci(1)

Room A105

T25-4. Cartography and Sustainable Development

Chair

Unlocking the Challenges and Achievements of the World Towards the Sustainable Development Goals Using Cartography

Ayako Kagawa(1), Gakumin Kato, Mina Lee, Guillaume Le Sourd, Marco Lucafò, Oliva Martín Sánchez, Michael Montani

The Role of Topographic Maps in River Hydromorphology

Batuhan Kilic(1), Fatih Gulgen, Meltem Celen, Mehmet Salim Oncel, Halil Nurullah Oruc, Sinem Vural

Introducing a Qgis Technical Supplement for Mapping for a Sustainable World

Lily Houtman(1), Robert Roth

The New Engineering Geological Map (Carta Litotecnica) of Tuscany (Italy)

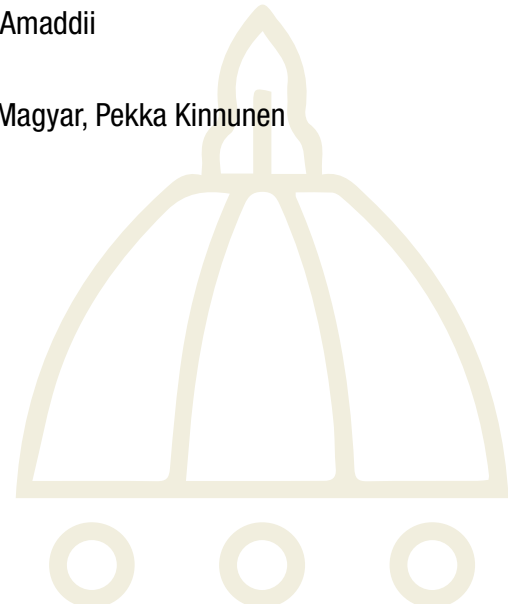
Leonardo Disperati(1), Enrico D'Addario, Lorenzo Bottai, Riccardo Giusti, Guido Lavorini, Gianni Lombardi, Elisa Mammoliti, Francesco Manetti, Lorenzo Marzini, Michele Papisidero, Michele Amaddii

Mapping Global Accessibility of Food Grains - Transport Accessibility by Gis

Ossi Kotavaara(1), Terhi Ala-Hulkko, Maija Toivanen, Anita Poturalska, Marton Magyar, Pekka Kinnunen

GIS-Based Expenditious Assessments in the Field of Water Protection

Francesco Mundo(1), Massimo Peleggi, Silvana Salvati



**Friday, December 17 • 17:00 - 18:45 •****Room A106****T19-2. Open Geospatial Data and Technologies****Chair**

Content-Based Image Retrieval for Map Georeferencing

Jonas Luft(1), Jochen Schiewe

Enhancing Kepler.GI for Processing Google Maps Timeline Data

Tianqi Xia(1), Hiroshi Kanasugi, Zipei Fan, Ruo Chen Si, Chuyao Feng, Hiroshi Takayasu, Ryosuke Shibasaki

Open Data - Open Software: Implementing Geospatial Requirements in Envidat With an Open-Source Stack

Ionut Iosifescu Enescu(1), David Hanimann, Dominik Haas-Artho, Marius Rüetschi, Dirk Karger, Gian-Kasper Plattner, Martin Hägeli, Rebecca Buchholz, Lucia De Espona, Niklaus Zimmermann, Loïc Pellissier

An Innovative Global Cloudless Satellite Map

Nicolas Bozon(1), Petr Pridal, Martin Kostal

High Resolution Land Use Map for Eco-Hydrological Modelling From IACS/LPIS Geodata Conflation

Flavio Lupia(1), Davide Rizzi, Diego Gallinelli, Pietro Macedoni, Fabio Pierangeli, Salvatore Carfi, Giuseppe Pulighe

Room A209**T34-4. Use, User, and Usability****Chair**

User Study on Informationally Equivalent Thematic Maps for Map Use Tasks

Katarzyna Slomska-Przech(1), Izabela Golebiowska

An End-User Evaluation to Explore the Effectiveness of Cartograms for Mapping Spatial Accessibility

Aldo Arranz-López(1), Julio A Soria-Lara, Amor Ariza-Álvarez

Personalisation of Data-Driven Storytelling

Sebastian Meier(1), Fabian Dinklage, Katrin Glinka

Spatial Searches for Journal Articles

Sanet Carow Carow(1), Curtis Mashimbye, Peter Schmitz, Ruan Schoeman

The Reading Strategies of a Map-Based Dashboard - Acquisition and Assessment

Chenyu Zuo(1), Linfang Ding, Liqiu Meng

The Usability of the Idrogeo Web Platform for the Dissemination of Information on Landslides and Floods in Italy

Carla Iadanza(1), Alessandro Trigila, Paolo Starace, Alessio Dragoni, Tommaso Biondo, Marco Roccisano

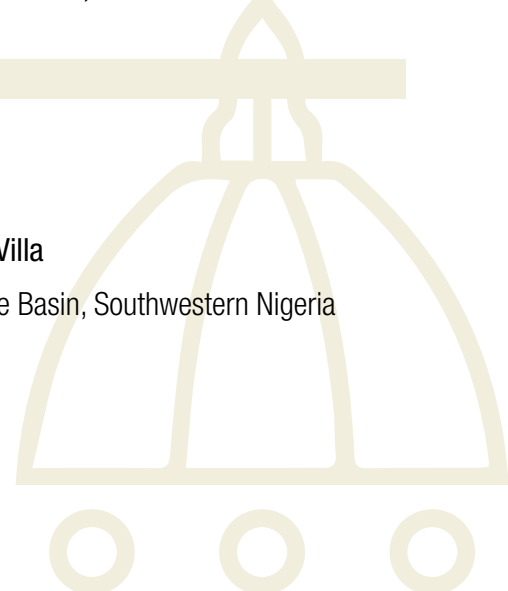
Room A210**T29-2. Mapping Urban Environments****Chair**

Deep Mapping the Real Estate Market in Milan (Italy)

Simone Gadenz(1), Jacopo Mugnaini, Michele Bocci, Alberto Cruccas, Matteo Villa

Assessment of Gold Mining Impact on the Vegetation of Itagunmodi-Igun Drainage Basin, Southwestern Nigeria From 1972-2010: a Gis and Remote Sensing Approach

Olawale Oluwafem Oluwafemi(1), Akinola Akinwumiju, Oluseyi Oladepo





Friday, December 17 • 17:00 - 18:45 •

Using Interactive Storymaps for Presenting the Work of an 18Th Century Architect
Elena Pfister(1), Stefan Sauer, Daniela Wenzel, Jan Wilkening

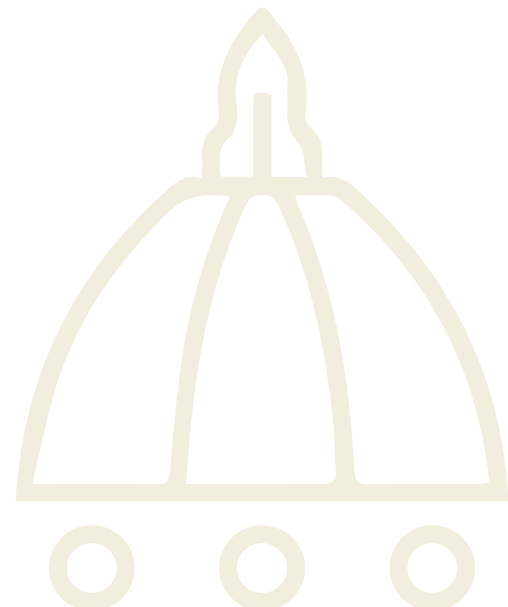
Local Climate Zone Mapping of Tirana, Albania
Anja Cenameri(1), Gáspár Albert

Obstacles Risk Modeling in Aerodromes Protection Zones
Andrea Lopes Iescheck(1), Gabriela Falavigna, Sergio Souza

Diagnosis of the Current Situation of the Cadastre and Its Relationship With Systematic Topographic Mapping
Andrea Lopes Iescheck(1), Claudia Robbi Sluter, Andrea Flavia Carneiro, Daniela Regina Pontes, José Antonio Gediel

Classifying Tourists' Photos and Exploring Tourism Destination Image Using a Deep Learning Model
Nahye Cho(1), Youngok Kang, Soyeon Park, Jiyeon Kim

Ruis - a Web Based Urban Information System for Rishikesh Area, India
Mohammed Surabud Mondal(1), Rabira Becho, E M Gutema, Merga Teshale Teshale, R D Garg





Saturday, December 18

The School Of Humanities, University Of Florence

• 8:45 - 10:15 •

RoomA101

T32-1. Military Mapping

Chair

New Topographic Maps for the Czech Armed Forces

Václav Talhofer(1), Lubos Belka, Filip Dohnal

The New Italian Map at 1:50.000 Scale: M793 Map Series

Giuseppe Giustolisi(1)

Forests as Protagonists on Battlefields: the Case Studies of Rivers Bridge and Honey Hill Through the Lens of a Hgis
Ludovico Maurina(1), Silvia Elena Piovan, Michael Edward Hodgson, Marco Filippini

Soviet Military City Plans Analysed: a Case Study From Israel and Denmark

Gad Schaffer(1), Stig Roar Svenningsen

The Soviet Military City Plan of Florence (1986)

Alexander Kent(1)

Field Sketching - Today and at the Beginning of Professional Military Mapping

Beata Medyńska-Gulij(1)

RoomA103

T28-1. Cartography in Digital Humanities

Chair

A Survey on the Evolution of the Chinese Cadastral System

Chenjing Jiao(1), Lorenz Hurni

Understanding Election Results With Different Types of Maps

Kristina Spörl(1), Jan Wilkening, Sabine Kirschenbauer(F)

A Gis Database Documenting the Historical Geography of South-Central Transylvania in the Modern Age (1699-1867)

Andrei Nacu(1)

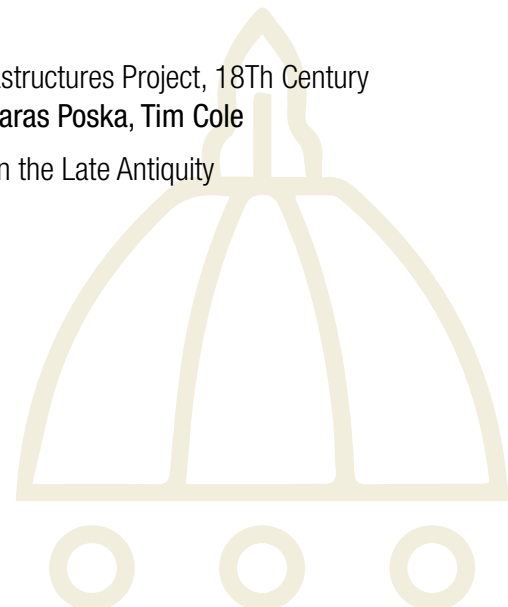
The Heian-Kyo Site'S Database and Platform: Their Construction and Utilization

Mikiharu Takeuchi(1), Keiji Yano

Mapping Geohistorical Narratives: the Grand Duchy of Lithuania Borderlands Infrastructures Project, 18Th Century
Alberto Giordano(1), Jurgita Verbickiene, Martynas Jalkulis, Andrej Ryckov, Aivaras Poska, Tim Cole

Cartographic Sources For the Reconstruction of the Syro-Palestinian Landscape in the Late Antiquity

Margherita Azzari(1), Carmelo Pappalardo, Anna Lena





Saturday, December 18 • 8:45 - 10:15 •

RoomA105

T17-2. Marine Cartography

Chair

Toward a Marine Road Network For Ship Passage Planning and Monitoring

Sean Kohlbrenner(1), Matthew Eager(2), Nilan Phommachanh, Amith Kashyap, Christos Kastrisios, Val Schmidt

The Lebanese Nautical Cartographic Plan Development

Marta Pratellesi(1), Manuela Milli, Afif Ghaith, Christian Fahed

Development of Electronic Nautical Charts For Pleasure Boating Market With High-Density Data

Cristina Tirone(1), Manuela Milli

The Influence of the Electronic Navigational Charts Over Maritime Services

Valentino Palma(1)

Nautical Charts Generalization: a Pragmatic Approach

Andriani Skopeliti(1), Lysandros Tsoulos, Leda Stamou, Shachak Pe Eri

RoomA106

T33-3. Augmented and Virtual Realities in Cartography

Chair

Immersive Deep Maps For Inaccessible Heritage Sites

Alisa Pettitt(1)

Spatial Knowledge Acquisition During Mr-Based Navigation in Complicated Environments

Bing Liu(1), Shengkai Wang

Building a Virtual Cartographic Museum

Pavel Ugwitz(1), Zdenek Stachon, Petr Kubicek

The Platform Evide: a Solution For the Geography Education in Collaborative Immersive Virtual Environment

Sasinka Cenek(1), Chmelik Jiri, Sasinkova Alzbeta, Stachon Zdenek

Usability of Building Information Modeling (BIM) For Generating Virtual Geographic Environments (Vges)

Ondrej Kvarda(1)

• 11:45 - 13:15 •

RoomA101

T26-T36. Cartography, Privacy, Ethics, and Perspectives

Chair

Integrating Cybercartography and Cybernetics in the Circle of All Nations Indigenous Mapping Exemplar of William Commanda

Romola V Thumbadoo(1), Fraser Taylor

Cybercartography Revisited

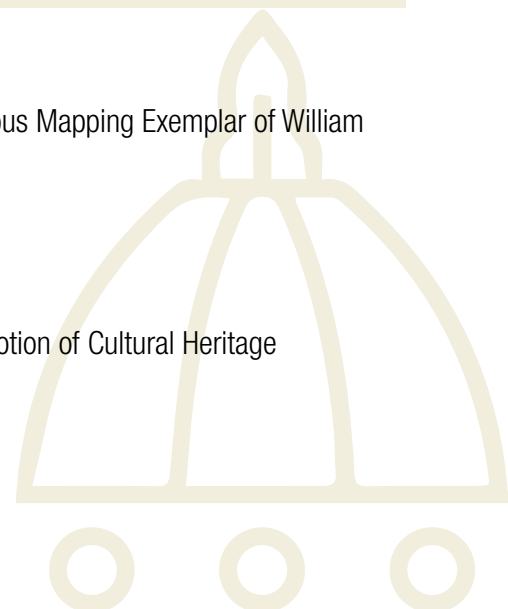
Fraser, D R Taylor(1)

Accessibility and Connection: the Challenges of the Reconstruction and the Promotion of Cultural Heritage

Luisa Carbone(1), Miriam Noto, Luca Lucchetti

LBS as Vectors of Influence

Maximilian Gartner(1)





Saturday, December 18 • 11:45 - 13:15 •

RoomA103

T28-2. Cartography in Digital Humanities

Chair

Mapping Academic Migration of German-Affiliated Researchers Across Countries Using 8 Million Scopus Publications From 1996 to 2020

Xinyi Zhao(1), Samin Aref, Emilio Zagheni, Guy Stecklov

Historical Cartography Analysis For a Design of Cultural Itineraries in the Lower Guadalquivir
Rebeca Merino Del Río(1)

Beyond East and West - Geocommunicating Historical Sacred Landscapes

Markus Breier(1), Karel Kriz, Alexander Pucher

Tianjin Time Machine

Aurélia Desplain(1), Davide Gherdevich

Virtual Reconstruction of Historical Landscapes: a 3D Environment to Contextualise Data in Space and Time

Margherita Azzari(1), Vincenzo Bologna, Pauline Deguy

RoomA105

T30-1. Theoretical Cartography

Chair

Definition of the Map

Miljenko Lapaine(1), Terje Midtbø, Georg Gartner, Temenoujka Bandrova, Tao Wang, Jie Shen

Epistemological Thoughts on the Success of Maps and the Role of Cartography

David Fairbairn Fairbairn(1), Georg Gartner, Michael Peterson

A Framework of Pan-Maps: Facilitating a Unification of Maps and Map-Likes

Yebin Chen(1), Shen Ying, Ding Ma, Renzhong Guo, Zhigang Zhao, Zhilin Li

Putting Mapper on a Map: Cartographic Visualizations of Topological Data Analysis

Jim Thatcher(1), David Retchless, Courtney Thatcher, Kristine Jones

A Spatial Second-Order Non-Stationary Interpolation Method For Large Area Mapping

Peng Luo(1), Yongze Song

Visual Search Performance in Maps by Brazilian Population

Ítalo De Sena(1), Zdenek Stachon, Cenek Sasinka, Petr Kubíček

RoomA106

T35-1. Map Projections

Chair

Best Cylindrical Map Projections According to the Undesirability of Angular and Areal Distortions

Krisztián Kerkovits(1)

Conic Projections With Three Or More Standard Parallels

Miljenko Lapaine(1)

Redefining of "Epsg" and "Proj4" For Current State Coordinate Reference System of the Republic of North Macedonia

Bashkim Idrizi(1)

