2021 digital edition - XXIVth ISPRS Congress  
Programme (June 21, 2021)

All hours provided in this document are Central European Summer Time (CEST / GMT + 2).

**Monday 5 July**

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<tr>
<th>Time</th>
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| 08:00 - 08:50 | Spatial Analysis (Technical Commission IV)                           | Mahmoud Delavar and Wu Hao                | MO.1.1: #374 A framework to manage uncertainty in the computation of waste collection routes after a flood.  
Arnaud Le Guilcher, Sofiane Martel, Mickaël Brasebin, Yann Méneroux.  
MO.1.2: #404 Remote sensing analysis of the changes in vegetated coastland: the case of Southeastern Europe.  
Kuenda Laze.  
MO.1.3: #313 On the visualization of positional precision.  
Jochen Meidow.  
MO.1.4: #487 An improved temperature spatial interpolation method for spaceborne lidar atmospheric correction.  
Mei Zhou, Kuangyu Li, Miaomiao Pan, Jiuying Chen, Chuanrong Li, Linsheng Chen. |
| 09:00 - 09:50 | Advanced applications for Smart Cities (Technical Commission IV) | Giorgio Agugiaro and Margarita Kokla     | MO.2.1: #282 Volume comparison of automatically reconstructed multi-LoD building models for urban planning applications.  
Truc Quynh Doan, Camilo León Sánchez, Ravi Peters, Giorgio Agugiaro, Jantien Stoter.  
MO.2.2: #797 Development of 3D cadastre in New South Wales though e-PLAN logement.  
Taha Masri, Dev Raj Paudyal.  
MO.2.3: #238 Accuracy investigation on image-based change detection for BIM compliant indoor models.  
Theresa Meyer, Ansgar Brunn, Uwe Stilla.  
MO.2.4: #395 Augmented reality asset tracking using hololens.  
Jihai Fan, Kourosh Khoshelham. |
| 10:00 - 10:50 | Thematic Information Extraction (Technical Commission III)               | Xinlian Liang                             | MO.3.1: #279 Towards fine-grained road maps extraction using sentinel-2 imagery.  
Christian Ayala, Carlos Aranda, Mikel Galar.  
MO.3.2: #620 Towards Detecting Floating Objects on a Global Scale with Learned Spatial Features using Sentinel-2.  
Jamila Mifdal, Nicolas Longépé, Marc Rußwurm.  
MO.3.3: #596 Germany’s first cloud-based web service for land monitoring using Copernicus Sentinel-2 data.  
Patrick Werner Knoefel, David Herrmann, Marcus Sindram, Michael Hovenbitzer. |
• MO.3.4: #767 Estimating carbon and greenhouse gas emissions in remote regions of Canada. Ima Ituen, Baoxin Hu.

11:00 - 11:30: Technology Track
Gunther Landgraf (European Space Agency). The ESA Earth Observation platforms to leverage open science and pioneer innovative applications.

11:00 - 11:50: Active Remote Sensing (Technical Commission III)
Chairperson: Batuhan Osmanoglu
• MO.4.1: #444 Using generative adversarial networks for extraction of InSAR signals from large-scale Sentinel-1 interferograms by improving tropospheric noise correction. Binayak Ghosh, Mahmud Haghshenas Haghighi, Mahdi Motagh, Setareh Maghsudi.
• MO.4.2: #635 UAV-based Lidar high-resolution snow depth mapping in the Swiss Alps: Comparing flat and steep forests. Kalliopi Koutantou, Giulia Mazzotti, Philip Brunner.
• MO.4.3: #628 Exploring cloud-based platforms for rapid InSAR time series analysis. Andreas Piter, Magdalena Vassileva, Mahmud Haghshenas Haghighi, Mahdi Motagh.

12:00 - 12:30: Opening and award ceremony.
Chairperson: Laurent Polidori
• Welcome message. Laurent Polidori (SFPT), Christian Heipke (ISPRS President), Nicolas Paparoditis (Congress Director)
• The Frederick J. Doyle Award. Christian Heipke, Armin Grün. Recipient: Konrad Schindler.

12:30 - 13:30: Keynote Speaker #1
Chairperson: Laurent Polidori
• Emmanuel Flory (Airbus). Pléiades Neo 30cm-resolution satellite constellation: enhanced data access and geospatial application.

13:30 - 14:15: Interactive poster session #1 (IPS.MO.1)
The list of posters scheduled for this session are provided at the end of this document.

14:15 - 15:00: Interactive poster session #2 (IPS.MO.2)
The list of posters scheduled for this session are provided at the end of this document.

15:15 - 16:15: Keynote Speaker #2
Chairperson: Nicolas Paparoditis
• The Karl Kraus Medal. Emmanuel Baltsavias, Julius Ernst, Uwe Sörgel, Christian Heipke. Recipients: Wolfgang Förstner, Bernhard Wrobel.
• Claudio Almeida (INPE, Brazil). Vegetation monitoring in Brazilian biomes. Legacies, challenges and future perspectives.
16:30 - 17:30: Technology Track

16:30 - 17:20: Sensor Calibration (Technical Commission I)
Chairpersons: Jan Skaloud, Francesco Nex
- MO.5.3: #741 A review of the one-parameter division undistortion model. Bastian Erdnuess.
- MO.5.4: #551 Sentinel-2 Surface Reflectance Products Generated By CNES And DLR: Methods, Validation And Applications. Olivier Hagolle, Jérome Colin, Sophie Coustance, Peter Kettig, Pablo d'Angelo, Stefan Auer, Georgia Doxani, Camille Desjardins.

Chairpersons: Michael Schmitt, Rupert Müller

18:30 - 19:20: Mobile Mapping (Technical Commission I)
Chairpersons: Naser El-Sheimy, Stephan Nebiker
08:00 - 08:50: Data integration (Technical Commission IV)
Chairpersons: Zhizhong Kang, Arzu Cöltekin
- TU.1.1: #694 Region adaptive adjustment strategy based on information entropy for remote sensing image segmentation. Xiaoli Li, Jinsong Chen.
- TU.1.2: #100 Classification and identification of artificial lakes based on national geographic-conditions data. Zhiwu Zhou, Shengyuan Jing, Yinxin Gong, Hui Zhao.
- TU.1.3: #801 Combining terrestrial scanned datasets with UAV point cloud for mining operations. Megan Fotheringham, Dev Raj Paudyal.
- TU.1.4: #451 A platform for multilayered documentation of cultural heritage. Marko Radanovic, Kourosh Khoshelham, Clive Fraser.

09:00 - 09:50: Data processing and simulation (Technical Commission IV)
Chairpersons: Maria Brovelli and Martin Breunig
- TU.2.1: #259 A two-level approach for the crowd-based collection of vehicles from 3D point clouds. Volker Walter, Michael Koelle, David Collmar, Yongxiang Zhang.
- TU.2.2: #644 Point cloud based 3D models for agent-based simulation in social distancing and evacuation. Shayan Nikoohemat, Paula Godoy, Nienke Valkhoff, Marlies Wouters, Robert Voute, Ville Lehtola.
- TU.2.3: #242 An experimental analysis of spatial indexing algorithms for real-time safety-critical map application. Furkan Cetin, M.Oguzhan Kulekci.
- TU.2.4: #466 Detection of the spatial variations of local populations from the viewpoint of urban structure analysis. Kiichiro Kumagai, Yuki Kameda.

10:00 - 10:20: Technology Track
Martin Pfennigbauer (Riegl). UAV-borne bathymetric lidar put to test.

10:00 - 10:50: Surface Modelling (Technical Commission III)
Chairpersons: Uwe Soergel, Kaichang Di
- TU.3.1: #214 Segmentation of buildings based on high resolution persistent scatterer point clouds. Philipp Schneider, Uwe Soergel.
- TU.3.3: #630 3D multi-resolution mapping of Mars using CASP-GO on HRSC, CRISM, CTX and HiRISE. Jan-Peter Muller, Yu Tao, Alfiah Ritzky Diana Putri, Susan Conway.
- TU.3.4: #266 Evaluating an Automated Object-Oriented Method to Delineate Drumlins from both Terrestrial and Submarine Digital Elevation Models. Kakoli Saha, Katrien J.J. Van Landeghem.

11:00 - 12:00: Technology Track
- Marc Spigai (Thalès Alenia Space). DeeperVision: an artificial intelligence powered computer vision facility performing automatic feature detection from satellite images.
● Frédéric Vallois (Thalès Alenia Space). WEkEO: an operational EUMETSAT, ECMWF, and MERCATOR Ocean DIAS for Copernicus data easy only access and processing.

● Frédéric Férésin (Thalès Alenia Space). In-space image processing using AI embedded on system on module: example of OPS-SAT cloud segmentation.

11:00 - 11:50: Hyperspectral Image Processing and Data Fusion (Technical Commission III)
Chairpersons: Eija Honkavaara and Baoxin Hu


● TU.4.2: #530 Detection of methane plumes in hyperspectral images from Sentinel-5p by coupling anomaly detection and pattern recognition. Elyes Ouerghi, Thibaud Ehret, Carlo de Franchis, Gabriele Facciolo, Thomas Lauvaux, Enric Meinhardt, Jean-Michel Morel.

● TU.4.3: #539 Analysis and detection of wildfires by using PRISMA hyperspectral imagery. Dario Spiller, Luigi Ansalone, Stefania Amici, Alessandro Piscini, Pierre Philippe Mathieu.

● TU.4.4: #401 Marrying deep learning and data fusion for accurate semantic labeling of sentinel-2 images. Guillemette Fonteix, Michael Swaine, Maxime Leras, Yuliya Tarabalka, Sébastien Tripodi, Frédéric Trastour, Anne Giraud, Lionel Laurore, Justin Hyland.

12:30 - 13:30: Keynote Speaker #3
Chairperson: Chen Jun


● Kiran Kumar (ISRO, India). Collection of scientific data of the Moon with the Chandrayaan satellites.

13:30 - 14:15: Interactive poster session #3 (IPS.TU.1)
The list of posters scheduled for this session are provided at the end of this document.

14:15 - 15:00: Interactive poster session #4 (IPS.TU.2)
The list of posters scheduled for this session are provided at the end of this document.

15:15 - 16:15: Keynote Speaker #4
Chairperson: Christian Heipke


● Marc Pollefeys (ETH Zürich & Microsoft, Switzerland). Computer Vision for Mixed Reality with Hololens2.

16:30 - 16:50: Technology Track
Roger Thomas (GeoDyn). Rapid scanning of aerial film archives with PromptSCAN.
16:30 - 17:20: 3D Change Detection  (Technical Commission II)
Chairperson: Belén Riveiro

- TU.5.3: #645 Automated and permanent long-range terrestrial laser scanning in a high mountain environment: setup and first results from error identification. Annelies Voordendag, Brigitta Goger, Christoph Klug, Rainer Prinz, Martin Rutzinger, Georg Kaser.
- TU.5.4: #307 Change detection of time-series 3d point clouds using robust principal component analysis. Takashi Fuse, Toshiki Yamano.

17:30 - 17:50: Technology Track

17:30 - 18:20: 3D Instance Detection  (Technical Commission II)
Chairperson: Michael Ying Yang

- TU.6.3: #542 Roadside tree extraction and diameter estimation with MMS LiDAR by using point-cloud image. Genki Takahashi, Hiroshi Masuda.
- TU.6.4: #322 Segmentation of traffic signs from poles with mathematical morphology applied to point clouds. Jesús Balado, Mario Soilán, Lucía Díaz-Vilariño, Peter van Oosterom.

18:30 - 19:20: 3D Semantic Segmentation  (Technical Commission II)
Chairperson: Norbert Haala

- TU.7.1: #790 Weakly supervised pseudo-label assisted learning for als point cloud semantic segmentation. Puzuo Wang, Wei Yao.
Wednesday 7 July

08:00 - 08:50: Education and Outreach (Technical Commission V & Youth Forum) Chairpersons: Senthil Kumar, Sheryl Rose Reyes
- WE.1.1: #633 Creative strategies in navigating the new normal: advancing the contributions of the ISPRS Student Consortium as an international organization. Sheryl Rose Reyes, Charmaine Cruz, Mustafa Ustuner, Sona Guliyeva, Charles Jjuuko.

09:00 - 09:50: Landuse and Landcover Change Detection (Technical Commission III) Chairperson: Ammatzia Peled
- WE.2.4: #365 Graph Neural Network Based Multi-feature Fusion for Building Change Detection. Wei Yuan, Xiuxiao Yuan, Zipei Fan, Zhiling Guo, Xiaodan Shi, Jianya Gong, Ryosuke Shibasaki.

10:00 - 10:30: Technology Track
Richard Goodman (Hexagon). Grow with the flow: scale as needed with Spatial Modeler.

10:00 - 10:50: Application of Remote Sensing Data (Technical Commission III) Chairpersons: Mitsunori Yoshimura, Fazlay S. Faruque
- WE.3.2: #380 Estimation of optimal crown coverage and canopy shape for shadow estimation on tropical moist broadleaf forest. Takumi Fujiwara, Wataru Takeuchi.
- WE.3.3: #325 Automated building segmentation and damage assessment from satellite images for disaster relief. Xiangtian Yuan, Seyed Majid Azimi, Corentin Henry, Veronika Gstaiger, Marco Codastefano, Michael Manalili, Stefano Cairo, Sirio Modugno, Marc Wieland, Anne Schneibel, Nina Merkle.
- WE.3.4: #726 Evaluating the impact of LaSRC and Sen2cor atmospheric correction algorithms on Landsat-8/OLI and Sentinel-2/MSI data over AERONET stations in Brazilian
territory. Renan de Freitas Bezerra Marujo, José Guilherme Fronza, Anderson Reis Soares, Gilberto Ribeiro de Queiroz, Karine Reis Ferreira.

10:45 - 12:15: Technology Track
- Lawrie Jordan, Peter Becker, Delphine Khanna (ESRI). Hands-on resources for learning imagery & remote sensing with ArcGIS.
- Peter Becker (ESRI). ArcGIS for image management, mapping, analysis, and visualization on-premises or in the cloud.

11:00 - 11:50: Best Paper session
Chairperson: Christian Heipke
- WE.4.1: #462 Robust estimation in robot vision and photogrammetry: A general model and its applications. Jiayuan Li, Yongjun Zhang, Qingwu Hu.
- WE.4.2: #717 Towards efficient indoor/outdoor registration using planar polygons. Rahima Djahel, Bruno Vallet, Pascal Monasse.
- WE.4.5: #118 Knowledge and skills related to active optical sensors in the body of knowledge for earth observation and geoinformation (EO4GEO BoK). Clémence Dubois, Boris Jutzi, Marc Olijslagers, Carsten Pathe, Christiane Schmullius, Martyna Anna Stelmaszczuk-Górska, Danny Vandenbroucke, Martin Weinmann.

12:30 - 13:30: Keynote Speaker #5
Chairperson: Lena Halounova
- The Willem Schermerhorn Award. George Vosselman, Chen Jun. 
  Recipient: Michael Ying Yang.

13:30 - 14:15: Interactive poster session #5 (IPS.WE.1)
The list of posters scheduled for this session are provided at the end of this document.

14:15 - 15:00: Interactive poster session #6 (IPS.WE.2)
The list of posters scheduled for this session are provided at the end of this document.

15:15 - 16:15: Keynote Speaker #6
Chairperson: Charles Toth
- The Schwidefsky Medal. Uwe Sörgel, Georg Bareth, Charles Toth. 
  Recipient: Derek Lichti.
- Christoph Stiller (Univ. Karlsruhe & KIT, Germany). Automated driving with and without maps.
16:30 - 17:20: 2D Segmentation and Classification (Technical Commission II)
Chairperson: Ribana Roscher
- WE.5.3: #153 Remote sensing image classification with the SEN12MS dataset. Michael Schmitt, Yu-Lun Wu.
- WE.5.4: #142 Detecting Cracks and Spalling Automatically in Extreme Events by End-to-end Deep Learning Frameworks. Yongsheng Bai, Halil Sezen, Alper Yilmaz.

17:30 - 18:20: 3D Registration (Technical Commission II)
Chairperson: Franz Rottensteiner
- WE.6.3: #337 Photogrammetry and computed tomography point cloud registration using virtual control points. Kun Zhan, Dieter Fritsch, Joerg F Wagner. (asking for earlier session)
- WE.6.4: #733 Registration optimization of mobile handheld scanner point clouds with static scans. Victor Alteirac, Hélène Macher, Tania Landes.

18:30 - 19:20: Stereo Matching (Technical Commission II)
Chairperson: Ewelina Rupnik
- WE.7.2: #151 Real-time depth map estimation from infrared stereo images of RGB-D cameras. Jiageng Zhong, Ming Li, Xuan Liao, Jiangying Qin, Hanqi Zhang, Qi Guo. (asking for earlier session)
- WE.7.3: #333 3D Surface Reconstruction From Multi-Date Satellite Images. Bullinger, Sebastian, Christoph Bodensteiner, Michael Arens.
Thursday 8 July
Thematic Sessions

08:00 - 08:50: Digital Twins
Chairpersons: Arzu Çoltekin (FHNW), Sidonie Christophe (LASTIG)
- TH.1.2: #382 Creating 3D indoor first responder situation awareness in real-time through a head-mounted AR device. Bart-Peter Smit, Robert Voûte, Edward Verbree.
- TH.1.3: #671 Embodied digital twins for environmental applications. Pejman Sajjadi, Jiayan Zhao, Jan Oliver Wallgrun, Jiawei Huang, Mahda Bagher, Alexander Klippel.
- TH.1.4: #578 Hybrid GIS-BIM approach for the Torino Digital-Twin: the implementation of a 3D city geodatabase for floor-level urban analysis. Giulia Sammartano, Marco Avena, Marco Cappellazzo, Antonia Spanò.

09:00 - 09:50: Unconventional applications for geospatial deep learning
Chairpersons: Matthieu Molinier (VTT), Devis Tuia (EPFL)
- TH.2.2: #512 Deep no learning approach for unsupervised change detection in hyperspectral images. Sudipan Saha; Lukas Kondmann; Xiao Xiang Zhu.
- TH.2.4: #708 End-to-end physics-informed representation learning from and for satellite ocean remote sensing data. Ronan Fablet, Mohamed-Mahmoud Amar, Quentin Febvre, Maxime Beauchamp, Bertrand Chapron.

10:00 - 10:50: AI for Knowledge Discovery in Geosciences
Chairpersons: Anca Anghelea (ESA), Diego Fernandez-Prieto (ESA)
- TH.3.1: #252 AI4EO: Reasoning, Uncertainty, Ethics and Beyond. XiaoXiang Zhu.
- TH.3.4: #317 Asking questions to Sentinel images: a deep learning perspective. Devis Tuia, Sylvain Lobry.
- TH.3.5: #730 Remote sensing, AI and innovative prediction methods for adapting cities to the impacts of the climate change. Beril Sirmacek.
- TH.3.6: #253 Earth system data cubes: towards a multivariate understanding of regional to global land surface dynamics. Miguel Mahecha, Fabian Gans, Gunnar Brandt, Markus Reichstein, Carsten Bruckmann.

11:00 - 11:50: Towards resilient & ubiquitous navigation
Chairperson: Charles Toth (OSU)
- TH.4.1: #775 Cubesat onboard algorithm for space debris motion determination by processing stereo images. Sergei Petrovich Simakov, Igor Vitalevich Belokonov.
13:00 - 15:00: Forum #1
Towards Transformational Change: Potential Contributions of ISPRS and the Role of the Youth in Sustainable Development (organized by UNEP and ISPRS Student Consortium)
Coordination:
- ISPRS Student Consortium: Sheryl Rose Reyes, Nicolas Pucino and Laxmi Thapa.
- UNEP: Adele Roccato and Pierre Boileau.

15:15 - 16:15: Keynote Speaker #7
Chairperson: Songnian Li
- The Samuel Gamble Award. Marlene McKinnon, Songnian Li.
  Recipients: Jonathan Li & Jan Skaloud.
- Sarah Gallagher (Univ. of Western Ontario and Canadian Space Agency, Canada). Space-based Earth observations. Challenges and new opportunities.

16:30 - 17:20: ISPRS Scientific Initiatives & Education and Capacity Building Initiatives (I)
Chairperson: Songnian Li (Ryerson University)
- TH.5.4: LightCam: Enlightening the camera obscura - Where photogrammetry, computer and robotic vision meet. Erica Nocerino, Fabio Menna, Ronny Hänsch.

17:30 - 18:20: ISPRS Scientific Initiatives & Education and Capacity Building Initiatives (II)
Chairperson: Songnian Li (Ryerson University)
- TH.6.2: #411 UP4DREAM capacity building project: UAS based mapping in developing countries. Alessio Calantropio, Filiberto Chiabrando, Jessica Comino, Andrea Lingua, Paolo Maschio, Tautvydas Juskauskas.
● TH.6.4: ISAC assessment of past SI and ECBI projects. Ian Dowman.

18:30 - 19:20: Cultural Heritage
Chairpersons: Michael Younan (GSEC), Fulvio Rinaudo (Politecnico di Torino)
● TH.7.2: #707 Integrating topographic, photogrammetric and laser scanning techniques for a Scan-to-BIM process. Mauro Lo Brutto, Emanuele Iuculano, Paolo Lo Giudice.
● TH.7.3: #732 HBIM modelling for an historical urban centre. Antonia Spanò, Marco Avena, Giulia Sammartano, Elisabetta Colucci.

Friday 9 July
Forum & ISPRS Geospatial Lecture Day 2021

Forum #2:
Geo for Pandemics
Coordination: Fazlay Faruque, chairman of ICWG III/IVc “Environment and Health”

● Session 1 : 08:00 - 11:00
● Session 2 : 15:00 - 18:00

ISPRS Geospatial Lecture Day 2021
Chairperson: Jan Dirk Wegner (University of Zurich)

8:30 - 11:00: Remote Sensing
Chairperson: Uwe Sörgel (University of Stuttgart)

● 8:30 – 9:30: Timo Balz (Wuhan University). PS-InSAR for surface motion estimation.
● 9:30 – 10:30: Gottfried Mandlburger (TU Wien). State and Trends in Airborne LiDAR.
● 10:30 – 11:00: coffee break & discussion chats.

11:00 Deep learning
Chairperson: Ribana Roscher (University of Bonn)
• 11:00 – 12:00: **Loic Landrieu** (IGN-ENSG). *Deep learning for 3D Point Cloud Analysis.*

• 12:00 – 13:00: **Charlotte Pelletier** (UBS Vannes) & **Marc Rußwurm** (TUM). *Deep Learning for time series classification.*

• 13:00 – 14:00: lunch break & discussion chats.

**14:00 Photogrammetry**

*Chairperson: Erica Nocerino (Aix Marseille Université)*

• 14:00 – 15:00: **Ewelina Rupnik** (IGN-ENSG, Univ. Gustave Eiffel, LASTIG), **Marc Pierrot-Deseilligny** (IGN-ENSG, Univ. Gustave Eiffel, LASTIG), **Yilin Zhou** (Amadeus), **Mehdi Daakir** (CERN). *High-precision mapping with UAVs.*

• 15:00 – 16:00: **Davide Cucci** (EPFL). *Dynamic networks.*

• 16:00 – 16:30: coffee break & discussion chats.

**16:30 GIS & OGC**

*Chairperson: Margarita Kokla (National Technical University of Athens)*


• 17:30 – 18:30: **Peter Baumann** (Jacobs University). *Federated Earth Datacubes: Concepts, Standards, Services.*

• 18:30-19:00: discussion chats.
Interactive poster session #1 (IPS.MO.1): Monday July 5 - 13:30 - 14:15

- **#127** Architecting Location Intelligence platforms using open source components. Ali Benahmed Daho, Hatem Bekhelifi.
- **#130** Remote sensing and nighttime urban heat island. Blanca Arellano, Josep Roca.
- **#154** Onboard/on-ground image processing chain for high-resolution Earth observation satellites. Edoardo Cuccheti, Christophe Latry, Gwendoline Blanchet, Mickael Bruno, Jean-Marc Delvit.
- **#170** Supervised classification methods for automatic damage detection caused by heavy rainfall using multitemporal high resolution optical imagery and auxiliary data. Arnaud Cerbelaud, Laure Roupiez, Gwendoline Blanchet, Pascal Breil, Xavier Briottet.
- **#191** RPAS based tracking of machinery used in asphalt paving process. Guido Martin Staub, Henry Diverth Montecino, José Esteban Díaz, Mauricio Alejandro Pradena, Seirgei Miller, Marcos Alfonso Díaz.
- **#210** Identification of misclassified pixels in semantic segmentation with uncertainty evaluation. Lina Emilie Budde, Dimitri Bulatov, Dorota Iwaszczuk.
- **#212** Active layer thickness retrieval over the Qinghai-Tibet plateau from 2000 to 2020 based on inSAR-measured subsidence and multi-layer soil moisture. Tian Chang, Jiangping Han, Zhenshi Li, Yuliang Wen, Tong Hao, Ping Lu, Rongxing Li.
- **#218** Automatic object segmentation to support crisis management of large-scale events. Seyed Majid Azimi, Ralph Kieß, Veronika Gstaiger, Reza Bahmanyar, Nina Merkle, Corentin Henry, Dominik Rosenbaum, Franz Kurz.
- **#251** Analysis on process quality control technology of geographical national conditions monitoring. Su Yin.
- **#255** Calibration and validation of the Intel t265 for visual localisation and tracking underwater. Tim Appelt, Joschka Van Der Lucht, Michael Bleier, Andreas Nüchter.
- **#261** Landslide Detection in Central America using the Differential Bare Soil Index. Alexander Ariza, Norma Angelica Davila, Hannah Kemper, Gerhard Kemper.
- **#327** Urban parametric perception. The case study of the historic centre of Perugia. Fabio Bianconi, Marco Filippucci, Marco Seccaroni, Costanza Maria Aquinardi.
- **#331** Wood and generative algorithms for the comparison between models and reality. Fabio Bianconi, Marco Filippucci, Giulia Pelliccia.
● #341 Qualitative testing of an advanced terrestrial laser scanner simulator: users experience and feedback. Maria Chizhova, Denys Gorkovchuk, Tatyana Kachkovskaya, Darius Popovas, Julia Gorkovchuk, Thomas Luhmann, Mona Hess.

● #343 Random noise assessment in aerial and satellite images. Aleksandr Chibunichev, Irina Anikeeva.

● #346 Requirements for aerial images quality, obtained for mapping purposes. Aleksandr Chibunichev, Irina Anikeeva.

● #350 Deep learning based roof type classification using very high resolution aerial imagery. Mehmet Buyukdemircioglu, Recep Can, Sultan Kocaman.

● #386 Use of very high spatial resolution imagery for mapping wood energy potential from tropical managed forest stands, Reunion Island. Hélène Bley-Dalouman, François Broust, Jean Prevost, Annelise Tran.

● #398 Rocky shoreline extraction using a Deep Learning model and Object-Based Image Analysis. Soumia Bengoufa, Simona Niculescu, Mustapha Kamel Mihoubi, Rabah Belkessa, Katia Abbad.

● #409 Open urban and forest datasets from a high-performance mobile mapping backpack – a contribution for advancing the creation of digital city twins. Stefan Blaser, Jonas Meyer, Stephan Nebiker.

● #415 Surface urban heat island effects on bio-productive rural land covers surrounding a low density urban center. Michael Burnett, Dongmei Chen.

● #418 Forest cover mapping and Pinus species classification using very high-resolution satellite images and random forest. Laura Alonso, Juan Picos, Julia Armesto.

● #429 Information acquisition on pedestrian movements in urban traffic with a mobile multi-sensor system. Björn Borgmann, Marcus Hebel, Michael Arens, Uwe Stilla.

● #437 Development of a low-cost, hand-held multi-sensor system for the monitoring of small water bodies. Robert Blaskow, Ellen Schwalbe.


● #475 Research on evaluation method of real estate registration data quality. Chun Xi Chen, He Zhang, Kunli Jiang, Haitao Zhao, Wenjun Xie, Chuan He, Su Yin.


● #484 Automatic detection and vectorization of roadway elements in point cloud and panoramic images from mobile mapping system. Étienne Barçon, Arthur Picard.

● #495 Investigation of the changes of lake surface temperatures and areas: case study of Burdur and Egirdir lakes, Turkey. Nagihan Aslan, Dilek Koc-San.

● #516 Photogrammetric underwater and UAS surveys of archaeological sites: the case study of the Roman shipwreck of Torre Santa Sabina. Alessio Calantropio, Filiberto Chiabrando, Rita Aurienma.

● #522 Spatio temporal data cube applied to AIS containerships trend analysis in the early year of the Belt and Road Initiative - From global to local scale. Emere Arco, Andrea Ajmar, Fabio Cremaschini, Cristina Monaco.


● #537 Automated reflectance target detection for automated vicarious radiometric correction of UAV images. Seung Hwan Ban, Tae Jung Kim.

● #566 Influence of illumination changes on image-based 3D surface reconstruction. Nazarena Bruno, Anna Giacomini, Riccardo Roncella, Klaus Thoeni.

● #567 Upscaling and validation of RTK-direct georeferenced UAV-based RGB image data with Planet imagery using polygon grids for pasture monitoring. Georg Bareth, Christoph Hütt.
- #570 Road type classification of MLS point clouds using deep learning. Qian Bai, Roderik Lindenerbergh, Julien Vijverberg, Jeroen Guelen.
- #594 Development of panoramic virtual tours system based on low cost devices. Issam Boukerch, Bachir Takarli, Kamal Saidi, Mokrane Kariche, Abd El Kader Mestapha Meguenni.
- #605 Toward a multi-source remote sensing wetland inventory of the US: preliminary results on wetland inventory of Minnesota. Sarina Adeli, Bahram Salehi, Masoud Mahdianpari, Lindi J. Quackenbush.
- #626 Geophysical and UAV-based observations over a flood defense structure : application to the Polder2C’s experimental dike. Raphaël Antoine, Cyrille Fauchard, Vincent Guilbert, Bruno Beaucamp, Cyril Ledun, Christophe Heinkelé, Lucile Saussaye, Steven Muylaert, Wim Vancalster, Davy Depreiter, Philippe Sergent.
- #684 Building OPENDRIVE model from mobile mapping data. Mark Barsi, Arpad Barsi.
- #697 3D Content Generation using Hybrid Aerial Sensor Data. Uwe Bacher.
- #701 Earthquake prediction evaluation based on VLF data using a novel "intersection-union" method. Wrya Barghi, Mahmoud Reza Delavar, Mahmoud Shahabadi, Mehdi Zare, Seyed Ahmad Esalminezhad, Hadi Bayat.
- #747 UAV UWB positioning close to building facades: a case study. Myrto Bouloukou, Andrea Masiero, Antonio Vettore, Vassilis Gikas.
- #781 Determining the suitable location for the metallurgical and steel processing factory in Mongolia using GIS-based multi-criteria analysis methods. Zolzaya Adiya, Battogtokh Dorjgotov, Sainbyan Bayarsaikhan, Myagmarteren Purevtsanger.
- #787 Suitable dem assessment study for data scarce cities towards urban extreme and nuisance flood mapping. Anjaneyulu Akkimi, Subashisa Dutta.
- #793 GNSS and photogrammetry by the same tool: a first evaluation of the Leica gs18i receiver. Vittorio Casella, Marica Franzini, Ambrogio Maria Manzino.
- #809 Label-efficient Deep Learning-based Semantic Segmentation of Building Point Cloud at LoD3 Level. Yuwei Cao, Marco Scaioni.
- #823 The What, Where & When! Multi-disciplinary Trend -Detection, -Analysis & -Forecasting From Aerial Film Archives. Rolf Becker.
Interactive poster session #2 (IPS.MO.2): Monday July 5 - 14:15 - 15:00

- #109 Machine learning techniques for knowledge extraction from satellite images: application to specific area types. **Corneliu Octavian Dumitru**, Gottfried Schwarz, Mihai Datcu.
- #116 Field validation of ICESat-2 data along CHINARE route in East Antarctica. **Haotian Cui**, Rongxing Li, Hongwei Li, Tong Hao, Gang Qiao, Youquan He, Gang Hai, Huan Xie, Yuan Cheng, Bofeng Li.
- #121 Interactive extraction of linear structures from LiDAR raw data for archaeomorphological structure prospection. **Philippe Even**, Axelle Grzesznik, Anne Gebhardt, Thomas Chenal, Pierre Even, Phuc Ngo.
- #133 Towards more efficient UAS data acquisition: camera auto mount pivoting oblique survey. **Igor Sales Da Gama Campos**.
- #156 AI in support to water quality monitoring. **Carlo Andrea Biraghi**, Maryam Lotfian, Daniela Carrion, Maria Brovelli.
- #171 Moving toward open geospatial systems: the un open gis initiative. **Maria Antonia Brovelli**, Ki-Joune Li, Kyoung-Soo Eom.
- #172 55 Years in ISPRS - The ambassador of our profession. **Lawrence W. Fritz**.
- #179 Generative adversarial network to generalise urban area in topographic maps. **Azelle Courtial**, Guillaume Touya, Xiang Zhang.
- #235 Environmental challenges, technical solutions and standard operating procedures for data collection in photogrammetric studies toward a unified database of objects and features in underwater caves in Mexico. **Julien Fortin**, Sam Meacham, Dominique Rissolo, Christophe Le Maillot, Fred Devos.
- #281 Review of high-resolution global land cover. **Gorica Bratic**, Alberto Vavassori, Maria Antonia Brovelli.
● #329 Exploitation of spectral and temporal information for mapping plant species in a former industrial site. **Rollin Gimenez**, Guillaume Lassalle, Rémy Hédacq, Arnaud Elger, Dominique Dubucq, Anthony Credoz, Christelle Jennet, Sophie Fabre.

● #344 Automatic change detection of digital maps using aerial images and point clouds. **Felix Dahle**, Ken Arroyo Ohori, Giorgio Agugiaro, Sven Briels.


● #406 Unmanned aerial vehicle derived 3D model evaluation based on ICESat-2 for ice surface micro-topography analysis in east antarctica. **Youquan He**, Gang Qiao, Hongwei Li, Xiaohan Yuan, Yanjun Li.


● #441 Zonation of subalpine lakes based on remotely sensed water quality parameters. **Chiara Gerosa**, Mariano Bresciani, Giulia Luciani, Carlo Andrea Biraghi, Daniela Carrion, Michela Rogora, Maria Antonia Brovelli.

● #459 Analysis on the area changes and its influencing factors of the lakes in Wuhan city based on Google Earth Engine. **Tiantian Gong**, Shuangyu Xie, Haonan Zhao.

● #470 Generating Synthetic 3D Point Segments for Improved Classification of Mobile Lidar Point Clouds. **Sagar Chitnis**, Zexian Huang, Kourosh Khoshehham.

● #474 Towards free-viewpoint video capture in challenging environments for collaborative & immersive analysis. **Anton Frolov**, Gareth Rendle, Adrian Kreskowski, Mariya Kaisheva, Bernd Froehlich, Volker Rodehorst.

● #491 A praxis on data quality evaluation of underground pipeline. **Haitao Zhao**, Jin Zhou.

● #494 Spatial-Temporal Changes Of Land Degradation Caused By Natural And Human Induced Factors: Case Study Of Bulgan Province In Central Mongolia. **Sainbayar Dalantai**, Erdenesukh Sumiya, Yuhai Bao, Munkhdulam Otgonbayar, Urtnasan Mandah, Bayartungalag Batsaikhan, Boldbaatar Natsagdorj.

● #505 Geovisualization of aerial photogrammetric flights for data quality assessment. **Mehmet Buyukdemircioglu**, Sultan Kocaman.

● #514 MAGO approach for semantic segmentation: the case study of UAVid benchmark dataset. **Sara Gagliolo**, Domenico Sguerso.

● #521 Predicting the infrared UAV imagery over the coast. **Antoine Collin**, Dorothée James, Antoine Mury, Mathilde Letard, Benoit Guillot.

● #525 Ontology-based data mapping to support planning in Historical urban centres. **Elisabetta Colucci**, Margarita Kokla, Francesca Noardo.

● #540 A comparison between 3D reconstruction using NeRF Neural Networks and MVS algorithms on cultural heritage images. **Francesca Condorelli**, Fulvio Rinaudo, Francesco Salvador, Stefano Tagliaventi.

● #549 Land subsidence hazard in Iran revealed by country-scale analysis of Sentinel-1 InSAR. **Mahmoud Haghshenas Haghighi**, Mahdi Motagh.

● #561 Concept to Analyze the Displacement Time Series of Individual Persistent Scatterers. **Madeline Evers**, Antje Thiele, Horst Hammer, Erich Cadario, Karsten Schulz, Stefan Hinz.

Interactive poster session #3 (IPS.TU.1): Tuesday July 6 - 13:30 - 14:15

- #159 Segmentation on Sentinel-3 data for surface heat island detection. Ioannis Kotaridis, Maria Lazaridou.
• #160 Individual tree crown delineation from high spatial resolution imagery using U-net. Baoxin Hu, Won Mo Jung.
• #173 A web-based platform for management and visualization of geometric documentation products of cultural heritage sites. Charalabos Ioannidis, Ioannis Tallis, Ilias Pastos, Argyro-Maria Boutsis, Styliani Verykokou, Sofia Soile, Panagiotis Tokmakidis, Konstantinos Tokmakidis.
• #187 The potential of Sentinel-1 data to supplement high resolution earth observation data for monitoring green areas in cities. Anna Iglseeder, Moritz Bruggisser, Alena Dostálová, Norbert Pfeifer, Stefan Schlaffer, Wolfgang Wagner, Markus Hollaus.
• #189 Efficient tour planning for a measurement vehicle by combining Next Best View and Traveling Salesman. Joachim Gehrwur, Marcus Hebel, Michael Arens, Uwe Stilla.
• #200 Learning harmonised Pléiades and Sentinel-2 surface reflectances. Julien Michel, Jordi Inglała.
• #221 Analysis and bias improvement of height models based on satellite images. Karsten Jacobsen, Ricardo Passini.
• #223 Citywide estimation of parking space using aerial imagery and OSM data fusion with deep learning and fine-grained annotation. Corentin Henry, Jens Hellekes, Nina Merkle, Seyed Majid Azimi, Franz Kurz.
• #236 Individual tree extraction from uav lidar point clouds based on self-adaptive mean shift segmentation. Zhenyang Hui, Na Li, Yuanping Xia, Penggen Cheng, Yating He.
• #241 Application and Platform Design of Geospatial Big Data. Heng Li, Wei Huang, Zhuhua Zha, Jing Yang.
• #274 Research oriented remote sensing image processing software design in practical courses for senior undergraduates. Haopeng Zhang, Danpei Zhao, Fengying Xie, Zhiguo Jiang.
• #286 Geomorphological mapping of intertidal areas. Meng Lu, Lars Groeneveld, Derek Karssenberg, Shunping Ji, Robert Jentink, Edwin Paree, Elisabeth Addink.
• #310 A digital archive of Borobudur based on 3D point clouds. Masanori Kawato, Liang Li, Kyoko Hasegawa, Motoaki Adachi, Hiroshi Yamaguchi, Fadjar Thufail, Sugeng Riyanto, Brahmantara Yk, Satoshi Tanaka.
• #324 Observations of continuous instability for Scar Inlet Ice Shelf, Antarctic Peninsula. Yanjun Li, Gang Qiao, Xiaohan Yuan.
• #326 Evaluation of interior orientation modelling for cameras with aspheric lenses and image pre-processing with special emphasis to SfM reconstruction. Heidi Hastedt, Thomas Luhmann, Heinz-Jürgen Przybilla, Rofallsi Robin.
• #334 Learning multi-modal features for dense matching-based confidence estimation. Konstantin Heinrich, Max Mehltertter.
• #342 Data fusion of historical photographs with modern 3D data for an archaeological excavation – concept and first results. Paul Kalinowski, Frank Both, Thomas Luhmann, Ursula Warnke.
• #345 A Comparative Study of Point Clouds Semantic Segmentation Using Three Different Neural Networks on the Railway Station Dataset. Yustisi Ardhitasari Luman-Gaol, Zhaiyu Chen, Mels Smit, Xiaoai Li, Mihai-Alexandru Erbasu, Edward Verbree, Jesús Balado, Martijn Meijers, Niels Van Der Vaart.
• #349 3D reconstruction of ice shape using visible and thermal range imaging for aircraft icing study. Vladimir A. Knayz, Mikhail M. Novikov, Eugeny V. Ippolitov.
• #355 An efficient nD-point data structure for querying flood risk. Haicheng Liu, Peter Van Oosterom, Bing Mao, Martijn Meijers, Rod Thompson.
• #364 A concept for the segmentation of individual urban trees from dense MLS point clouds. Philipp-Roman Hirt, Ludwig Hoegner, Uwe Stilla.
• #389 On the organization and validation of a pilot test of a mobile crowdsourced air quality monitoring system. Danielly Garcia, Francisco Vázquez-Gallego, M. Eulàlia Parés Calaf.
• #422 Distribution and evolution of ice aprons in a changing climate in the Mont-Blanc massif (Western European Alps). Suvrat Kaushik, Ludovic Ravanel, Florence Magnin, Yajing Yan, Emmanuel Trouvé, Diego Cusicanqui.
• #431 Aerial photogrammetry and machine learning based regional landslide susceptibility assessment for an earthquake prone area in Turkey. Gizem Karakaş, Sultan Kocaman, Candan Gökteoğlu.
• #468 Building segmentation in agricultural land using high resolution satellite imagery based on deep learning approach. Liang-Yi Liu, Chi-Kuei Wang.
• #485 Ice flow velocity mapping in East Antarctica using historical images from 1960s to 1980s: recent progress. Shulei Luo, Yuan Cheng, Zhen Li, Yiyu Wang, Kangle Wang, Xiaofeng Wang, Gang Qiao, Wenkai Ye, Yanjun Li, Menglian Xia, Xiaohan Yuan, Yixiang Tian, Xiaohua Tong, Rongxing Li.
• #496 The Use AHP within GIS for destroyed areas in Damascus, Syria. Mohamad Khalil, J. Satish Kumar.
• #526 An accurate real-time uav mapping solution for the generation of orthomosaics and surface models. Alexander Kern, Philipp Fanta-Jende, Philipp Glira, Felix Bruckmüller, Christoph Sulzbachner.
• #545 Real-time dense 3D reconstruction from monocular video data captured by low-cost UAVs. Max Hermann, Boitumelo Ruf, Martin Weinmann.
• #558 Joint land cover and crop type mapping using multi-temporal Sentinel-2 data from various environmental zones in Greece. Christina Karakizi, Zacharias Kandylakis, Aristides D. Vaiopoulos, Konstantinos Karantzalos.
• #554 Long-term monitoring of environmental changes along China-Europe railway express (CER Express) using multi-source remotely sensed data. Bohong Ma, Xian Guo, Jie Jiang, Dubravko Culibrk, Shuai Ding, Marko Vilotic, Yang Li.
• #562 Enhancing uav coastal mapping using infrared pansharpening. Dorothée James, Antoine Collin, Antoine Mury, Mathilde Letard, Benoit Guillot.
• #568 Using systems of parallel and distributed data processing to build hydrological models based on remote sensing data. Alexey A Kolesnikov, Pavel M Kikin, Evgeny A Panidi, Anastasia G Rusina.
• #569 The use of Sentinel 1/2 vegetation indexes with GEE time series data in detecting land cover changes in the Sinop nuclear power plant construction site. Emre Çolak, Madhu Chandra, Filiz Sunar.
• #579 Unsupervised object-based clustering in support of supervised point-based 3D point cloud classification. Eleonora Grilli, Florent Poux, Fabio Remondino.

- **#610** *Review on photogrammetric surface inspection in automotive production*. Max Erik Hödel, Ludwig Hoezner, Uwe Still.


- **#625** *The memory of a 2nd WW camp: 3D modeling using the combination of hybrid technologies*. **Mathieu Koehl**, Yassine Seddik, Alexandre Calay, Juliette Brange, Michaël Landolt, Florian Basoge, Samuel Guillemin, Loïc Lutz.


- **#647** *Evaluation of 3D UAS flight path planning algorithms*. **Paul Debus**, Volker Rodehorst.


- **#676** *Accessing and processing Brazilian Earth observation data cubes with the Open Data Cube platform*. **Vitor Conrado Faria Gomes**, Felipe Menino Carlos, Gilberto Ribeiro Queiroz, Karine Reis Ferreira, Rafael Santos.


- **#711** *Investigating 3D reconstruction of non-collaborative surfaces integrating photogrammetry and photometric stereo*. **Ali Karami**, Fabio Menna, Fabio Remondino.


- **#716** *Low-cost DGPS assisted aerial triangulation for sub-decimetric accuracy with non-RTK UAVs*. **Francesco Ioli**, Livio Pinto, Francesco Ferrario.

- **#729** *CNN semantic segmentation to retrieve past land cover out of historical orthoimages and DSM*. **Arnaud Le Bris**, Clément Mallet, Sébastien Giordano.

- **#742** *Effects of geospatial data sources on the identification and characterization of burnt areas in portugal*. **Cidália Costa Fonte**, Joaquim Patriarca, Diogo Duarte.

- **#753** *Socioeconomic drivers of land use intensification in Fiji Islands: a geographical approach*. **David Lopez Cornelio**.

- **#800** *Bidirectional reflectance distribution function (brdf) of mixed pixels*. **Fadi Kizel**, Yulia Vidro.


**Interactive poster session #4 (IPS.TU.2): Tuesday July 6 - 14:15 - 15:00**

- **#122** *Updating landslide inventory maps using high resolution digital orthophotos and Digital Surface and Elevation modeling: the case study of Brusque city, Santa Catarina State, Brazil*. **Liliana Sayuri Osako**.
- #135 Drone-Based Container Crane Inspection: Concept, Challenges and Preliminary Results. Mehdi Maboudi, Ahmed Alamouri, Vanessa De Arriba López, Mohammad Shafi Bajauri, Cosima Berger, Markus Gerke.
- #157 Automated structural forest changes using lidar point clouds and GIS analyses. Ana Novo, Higinio González-Jorge, Joaquín Martínez-Sánchez, José María Fernández-Alonso, Henrique Lorenzo.
- #163 On the classifier performance for simulation based debris detection in SAR imagery. Silvia Kuny, Horst Hammer, Karsten Schulz.
- #164 Using tailored graphical tools to improve the quality of displacement maps at CTTC: the VETools. José Navarro, Anna Barra, Oriol Monserrat, Michele Crosetto.
- #183 Point cloud exploitation for structural modelling and analysis: a reliable workflow. Alighiero Lucidi, Ersilia Giordano, Francesco Clementi, Ramona Quattrini.
- #190 Invasion of Savannas by Prosopis Trees in Eastern Africa: Exploring their Impacts on LULC Dynamics, Livelihoods and Implications on Soil Organic Carbon Stocks. Purity Rima Mbaabu, Urs Schaffner, Sandra Eckert.
- #192 Analysis of the attacker and defender GAN models for the indoor navigation network. Lei Niu, Yiquan Song, Yun Yu, Jiwei Chu, Shuqian Li.
- #199 Comparison of estimation methods to quantify methane plume concentration at high spatial resolution from hyperspectral images. Nicolas Nesme, Pierre-Yves Foucher, Stéphanie Doz, Olivier Lezeaux, Claude Camy-Peyret.
- #203 Algorithm for the counter clockwise ordering of vertexes of slanted surfaces towards the generation of semantic gbxml. Roi Otero, Susana Lagüela, Pedro Arias.
- #208 Determination of parking space and its concurrent usage over time using semantically segmented mobile mapping data. Artem Leichter, Udo Feuerhake, Monika Sester.
- #233 Using geo-tagged Flickr images to explore the correlation between land cover classes and the location of bird observations. Maryam Lotfian, Jens Ingensand.
- #256 SAR-Based Coastline Detection and Monitoring. Marco Mazzolini, Marco Manzoni, Andrea Virgilio Monti-Guarnieri, Naomi Petrushevsky.
- #272 Citizen-generated geodata for natural parks use analysis: Insights from Facebook in the Insubria region. Daniele Oxoli, Maria Antonia Brovelli.
- #284 Setup of a CORONA camera and image co-registration/calibration. Noah Kunz, Peter Bochmann, Gerhard Kemper.
- #300 Exploring the use of classification uncertainty to improve classification accuracy. Daniel Moraes, Pedro Benevides, Francisco D. Moreira, Hugo Costa, Mário Caetano.
- #311 Bundle adjustment with polynomial point-to-camera distance dependent corrections for underwater photogrammetry. Erica Nocerino, Fabio Menna, Armin Gruen.


● #352 Positive and negative roughness according to local differences between DEM surface and 3D reference planes. Jean Francois Parrot, Carolina Ramirez Nunez.


● #385 Coherence and backscatter based cropland mapping using multi-temporal Sentinel-1 with dynamic time warping. Omer Gozbek Narin, Saygin Abdikan, Caglar Bayik, Alihsan Sekertekin, Ahmet Delen, Fusun Balik Sanli.


● #456 Evaluating impressions based on gaze analysis and deep learning: A case study of attractiveness evaluation of streets in densely built-up wooden residential area. Takuya Oki, Sayaka Kizawa.

● #481 Coral reefs on inhabited and uninhabited small islands, Spermonde archipelago, Indonesia. Nurjannah Nurdin, Khaival Amri, Abd Rachman Rasyid, Dwia Aries Tina Pulubuhu, Nurliah Nurdin, Teruhisa Komatsu.


● #500 Spatial distribution, pollution, and health risk assessment of heavy metal in industrial area soils of ulaanbaatar, mongolia. Oyunbat Purevsuren, Batkhishig Ochirbat, Bayartungalag Batsaikhan, Frank Lehmkuhl, Martin Knippertz, Veit Nottebaum.

● #507 Integration of urban spatial data management and visualization with enterprise applications using open-source software. Hamidreza Ostadabbas, Helmut Merz, Heike Weippert.

● #517 InSAR Collaborative Monitoring Mode and Multi-Mode Computing Services for Geohazards Identification in Open-Pit Mining Area. Jin Zhang.


● #534 Analysis of geometric and orthogonal correction accuracy for cas-500 satellite images. Yoo Jin Lee, Taejung Kim.


● #553 First assessments into the use of commercial-grade solid state lidar for low cost heritage documentation. Arnadi Murtiyoso, Pierre Grussenmeyer, Tania Landes, Hélène Macher.

● #559 Comparison and evaluation of spatial interpolation methods for monthly average air temperature of mongolia based on digital elevation model. Boldbaatar Natsagdorj,

Interactive poster session #5 (IPS.WE.1): Wednesday July 7 - 13:30 - 14:15

- #128 Image to Point Cloud Translation using Conditional Generative Adversarial Network for Airborne LiDAR data. Takayuki Shinohara, Haoyi Xiu, Masashi Matsuoka.
● #131 Determination of regions suitable for agriculture in the gordon cosens forest of ontario by means of analytical hierarchy process with fuzzy logic inference. Rory Clifford Pittman, Baoxin Hu, Gunho Sohn.

● #150 Geometric enhancement of the openstreetmap road network. Fatima Zohra Belhouari, Issam Boukerch, Kamel Siyoucef.

● #169 Larger receptive field based RGB visual relocalization method using convolutional network. Jiangying Qin, Ming Li, Deren Li, Xuan Liao, Jiageng Zhong, Hanqi Zhang.


● #201 3D point cloud data processing and infrastructure information models: methods and findings from SAFEWAY project. Mario Soilán, Andrés Justo, Ana Sánchez-Rodriguez, Daniel Lamas, Belén Riveiro.

● #204 Water turbidity estimation from LiDAR bathymetry data by full-waveform analysis - comparison of two approaches. Katja Richter, David Mader, Patrick Westfeld, Hans-Gerd Maas.

● #207 Ambiguity concept in stereo matching pipeline. Emmanuelle Sarrazin, Myriam Cournet, Loïc Dumas, Véronique Defonte, Quentin Fardet, Yoann Steux, Natalia Jimenez Diaz, Emmanuel Dubois, David Youssefi, Fabrice Buffe.

● #211 Detecting the sources of ice block falls at the Martian North polar scarps by analysis of multi-temporal HiRISE Imagery. Shu Su, Lida Fanara, Xin Zhang, Klaus Gwinner, Ernst Hauber, Jürgen Oberst.


● #239 Inversing glacier albedo in high mountain asia based on sentinel-3 satellite data. Yixiang Tian, Zejun Liu.

● #248 A case study of the application of hand-held mobile laser scanning in the planning of an italian forest (Alpe di Catenza, Tuscany). Serena Sofia, Sebastiano Sferlazza, Alessandra Mariottini, Marco Niccolini, Tommaso Coppi, Marcello Miozzo, Tommaso La Mantia, Federico Maetzke.

● #250 Updates of ‘AW3D30’ ALOS global digital surface model in Antarctica with other open access datasets. Junichi Takaku, Takeo Tadono, Masanori Doutsu, Fumi Ohgushi, Hiroki Kai.

● #257 Research on key points of quality inspection of aerial photogrammetry results and quality improvement measures. Zongbiao Tian, Miao Li, Linbing Lv, Jin Zhou.

● #268 A monte carlo simulation study on the dome effect. Riccardo Roncella, Gianfranco Forlani, Fabrizio Diotri.


● #270 BIM on artificial intelligence for decision support in e-health. Bastian Pfaß, Claire Prudhomme, Jean-Jacques Ponciano.

● #285 3D Modelling using Aerial Oblique Images with close range UAV based data for single objects. Tomas Orlik, Eday Shechter, Gerhard Kemper.

● #293 Improving the Internal Accuracy of UAV-Image Blocks using Local Low-Altitude Flights and Scale-Bars. Mehdi Maboudi, Ahmed Elbillehy, Yahya Ghassoun, Markus Gerke.

● #319 From survey to 3d modelling to digital fabrication. a workflow aimed at documenting and transmitting built heritage. Roberta Spallone, Maria Concepción López González, Marco Vitali, Giulia Bertola, Fabrizio Natta, Francesca Ronco.
• #338 Investigating the performance of a handheld mobile mapping system in different outdoor scenarios. Eleonora Maset, Sara Cucchiara, Federico Cazorzi, Fabio Crosilla, Andrea Fusiello, Alberto Beinat.
• #378 Accuracy validation of tilted camera setups in open skies project and mapping applications. Mathias Motz, Gerhard Kemper, Doru Ciobanu.
• #383 The combined use of remote sensing and spatial modelling: when surface water impacts african buffalo (syncerus caffer caffer) movements in savanna environments. Florent Rumiano, Cédric Gaucherel, Pascal Degenne, Eve Miguel, Simon Chamaillé-Jammes, Hugo Valls-Fox, Daniel Coménis, Michel De Garine-Wichatitsky, Hervé Fritz, Alexandre Caron, Annelise Tran.
• #384 The use of spectral and textural features in crop type mapping using Sentinel-2A images: A case study, Çukurova Region, Turkey. Aylin Tuzcu Kokal, Filiz Sunar, Adalet Dervisoglu, Suha Berberoğlu.
• #388 comparison of multi-image deep-learning super-resolution for passive microwave images of arctic sea ice. Xiaofan Shen, Xiaomin Liu, Yuan Yao, Tiantian Feng.
• #405 A review of surge-type glaciers. Zixiang Sun, Gang Qiao.
• #410 Boat-based mobile laser scanning for shoreline monitoring of large lakes. Danilo Schneider, Robert Blaskow.
• #412 Comparison of pixel-based and feature-based approach for small object change detection. Junghoon Seo, Taejung Kim.
• #435 Semantic Segmentation of terrestrial LIDAR data using co-registered RGB data. Erick Sanchez Castillo, David Griffiths, Jan Boehm.
• #438 An efficient deep learning approach for ground point filtering in aerial laser scanning point clouds. Abdul Awal Md Nurunnabi, Felix Norman Teferle, Jonathan Li, Roderik C. Lindenbergh, Addisu Hunegnaw.
• #442 Deep Bayesian active learning in high-resolution satellite images for change detection in urban and suburban areas. Lemonia Rajia, Antigoni Panagiotopoulou.
• #450 Exploratory spatial analysis of housing prices obtained from web scraping technique. Thais Góes De Souza, Fernanda Doracy Rocha Fonseca, Vivian De Oliveira Fernandes, Júlio Cesar Pedrassoli.
• #458 Research on the network map service technology of remote sensing image intelligent conversion based on gan model. Dejin Tang, Wei Huang, Zhuhua Zha, Jing Yang, Xiaoming Zhou, Cong Wang.
• #504 The Setting up of a gis for the general population and housing census. Kamel Si Youcef, Issam Boukerch, Imane Hocine, Aicha Benabdellaker.
• #510 Sidewalk detection and pavement characterisation in historic urban environments from point clouds: preliminary results. Daniele Treccani, Lucia Diaz-Vilarino, Andrea Adami.
• #527 Landscape Analysis Techniques Applied to a Buddhist Carved Rock Sculpture. Giuseppe Salemi, Emanuela Faresin, Luca Maria Olivieri.
• #546 Deforestation detection in the Amazon rainforest with spatial and channel attention mechanisms. Pedro Tovar, Mabel Ortega Adarme, Raul Feitosa.
• #560 Integration of data of the remote sensing, GIS, and gamma-spectrometric analysis to study soil material redistribution. Lyubov N Trofimetz, Alexey A Kolesnikov, Evgeny A Panidi, Pavel M Kikin.
• #602 Automatic segmentation of point clouds in the architecture environment. Rocío Romero - Jarén, Jose Juan Arranz, Laura Navas-Sánchez, Emrah Erduran, Sandra Martinez-Cuevas, Belén Benito.
• #604 UAV photogrammetry and VHR satellite imagery for emergency mapping. The October 2020 flood in Limone Piemonte (Italy). Lorenzo Teppati Losè, Filiberto Chiabrando, Fabio Giulio Tonolo, Andrea Lingua.
- #608 Performance of the support vector machine and artificial neural network classifiers for roads identification. Alexandre Curvello De Andrade, Mauro José Arixandiri Jr, Fernanda Puga Dos Santos Carvalho, Vivian De Fernandes.
- #621 State-wide Calculation of Terrain-Visualisations and Automatic Map Generation for Archaeological Objects. Frank Thiemann, Malte Schulze, Utz Böhner.
- #629 A collaborative platform for water quality monitoring: simile WebGIS. Juan Fernando Toro Herrera, Daniela Carrion, Maria Antonia Brovelli.
- #679 Google earth engine based agricultural drought monitoring in Kodavanar watershed, part of Amaravathi basin, Tamil Nadu, India. Periasamy Thilagaraj, Palanisamy Masilamani, Ravichandran Venkatesh, Jothiramalingam Killivalavan.
- #680 Using MODIS aerosol optical depth to predict PM10 over Al Ain Region, UAE. Nazmi Saleous, Salem Issa, Marwa Al Suwaidi.
- #685 Assessment of flooded areas caused by a dam break (sardoba dam, uzbekistan). Beste Tavus, Sultan Kocaman, Candan Gokceoglu.
- #705 Improving UAV telemetry positioning for direct photogrammetry. Lorenzo Rossi, Francesco Ioli, Emanuele Capizzi, Livio Pinto, Mirko Reguzzoni.
- #709 Application of rail track geometry measuring trolleys for georeferencing of UAV images. Vladimir Vasil'Evich Shcherbakov, Maksim Aleksandrovich Altyntsev, Marina Anatol'Evna Altyntseva.
- #725 TLS and short-range photogrammetric data fusion for buildings 3D modeling. Paulo Roberto Da Silva Ruiz, Cláudia Maria De Almeida, Marcos Benedito Schimalski, Veraldo Liesenberg, Edson Aparecido Mitishita.
- #728 The Digital Elevation Model Intercomparison eXperiment DEMIX, a community based approach at global DEM benchmarking. Peter Strobl, Conrad Bielski, Peter Guth, Carlos Grohmann, Jan-Peter Muller, Carlos López-Vázquez, Dean B. Gesch, Giuseppe Amatulli, Serge Riazanoff, Claudia Carabajal.
- #773 Promising advances of amazonian monitoring systems throughout vanguard technology and scientific knowledge. Luciana Soler, Daniel Silva, Cassiano Messias, Thiago Carvalho Lima, Juan Doblas, Bruna Pechini, Jefferson Souza, Douglas Moraes, Claudio Almeida.
- #803 Evaluating hand-crafted and learning-based features for photogrammetric applications. Fabio Remondino, Fabio Menna, Luca Morelli.
- #807 Multispectral and mobile mapping isprs wg iii/5 data set: first analysis of the dataset impact. Mattia Previtali, Manuel Garramone, Marco Scaioni.
New imaging mobile mapping device based on high resolution videogrammetry for large-scale outdoor 3D reconstruction. **Pedro Ortiz-Coder**, Rubén Cabecera Soriano.

Large-scale subsidence geohazard monitoring with Sentinel-1 SAR Interferometry in central Lishui (China). **Tengteng Qu**, Zhumian Su, Hongzhen Yang, Xuguo Shi, Weiping Shao.

**Interactive poster session #6 (IPS.WE.2): Wednesday July 7 - 14:15 - 15:00**

- **#102** Monitoring of Time-Series Soil Moisture Based on Advanced DInSAR. **Chia-Hsiang Yang**, Andreas Mütterthies.
- **#243** Improving lulu classification from satellite imagery using deep learning - eurorsat dataset. **Hadi Yassine**, Kifah Tout, Mohamad Jaber.
- **#254** An automatic extraction method for Antarctic subglacial lake based on radio echo sounding data. **Dailiang Wang**, Tiantian Feng, Tong Hao, Rongxing Li.
- **#273** Scale-awareness for more accurate object detection. **Vasileios Tsironis**, Christos Stentoumis, Nikos Lekkas, Alex Nikopoulos.
- **#278** Parametric Modelling Approach to Reconstructing Architectural Indoor Spaces from Point Clouds. **Wissam Wahbeh**.
- **#309** Research and engineering practice of emergency geographic information collaborative service mode with crowdsourced data. **Jing Yang**, Wei Huang, Hongping Zhang, Dejin Tang, Heng Li.
- **#323** A high-currency geo-spatial service gateway for national geo-information service platform. **Hongping Zhang**, Wei Huang, Jie Jiang, Mingyi Du, Jing Yang.
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