United Nations Educational, Scientific and Cultural Organization

Intergovernmental Hydrological Programme

UNESCO Land Subsidence International Initiative

Newsletter of the Unesco Land Subsidence International Initiative

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Special Issue Remote Sensing (Deadline 31 December 2022)

https://www.mdpi.com/journal/remotesensing/special_issues/New_Advancements_Environmental_Remote_Sensing

Special Issue "New Developments in Remote Sensing for the Environment"

A special issue of Remote Sensing (ISSN 2072-4292). This special issue belongs to the section "Environmental Remote Sensing".

Deadline for manuscript submissions: 31 December 2022.

This Special Issue is covering the wide range of topics on environmental remote sensing, focusing on, but not limited to, the following topics:

Ecosystem assessment and monitoring

Land use/cover changes (LUCC)

Arid environments and droughts

Wetlands and coastal dynamics

Water resources vulnerability

Advanced methods for environmental applications

Coastal environments and climate change

Land subsidence and disaster monitoring

New sensors/platforms for environmental studies

New Literature

Important Issue

Our former chair, Devin Galloway, announced:

Land Subsidence Task Committee, 2022, Investigation of land subsidence due to fluid withdrawal: American Society of Civil Engineers, Reston, VA, 239 p., https://doi.org/10.1061/9780784415702.fm.

The book was developed over many years and was finally published. Attributed members of the ASCE Land Subsidence Task Committee that authored the book included three former or current members of the UNESCO Working Group on Land Subsidence: the late A. Ivan Johnson (retired, USGS), Keith R. Prince (retired, USGS), and Devin L. Galloway (Scientist Emeritus, USGS).

Urban Infrastructure

Guidance Notes for Sustainable Urban Infrastructure Investments

How the Asian Infrastructure Investment Bank (AIIB) can advance the urban transformation.

https://www.germanwatch.org/sites/default/files/guidance_notes_for_sustainable_urban_infrastructure_investments.pdf

India, South Bengal Basin

Pradip Kumar Sikdar et al.,

Understanding the Past-Present-Future Hydrogeologic System Through Numerical Groundwater Modeling of South Bengal Basin, India

https://www.frontiersin.org/articles/10.3389/frwa.2021.801299/full

Iran, Fars Province

Zeynab Najafi et al., Identification of land subsidence prone areas and their mapping using machine learning algorithms,

Editor(s): Hamid Reza Pourghasemi,

Computers in Earth and Environmental Sciences,

Elsevier,2022,Pages 535-545,ISBN 9780323898614,https://doi.org/10.1016/B978-0-323-89861-4.00019-1.

(https://www.sciencedirect.com/science/article/pii/B9780323898614000191)

Iran, Isfahan Province

Chitsazan, M., Rahmani, G. & Ghafoury, H. Land subsidence susceptibility mapping using PWRSTFAL framework and analytic hierarchy process: fuzzy method (case study: Damaneh-Daran Plain in the west of Isfahan Province, Iran). Environ Monit Assess 194, 192 (2022). https://doi.org/10.1007/s10661-021-09645-3

Italy, Naples

Tufano, R., Guerriero, L., Annibali Corona, M. et al. Anthropogenic sinkholes of the city of Naples, Italy: an update. Nat Hazards (2022). https://doi.org/10.1007/s11069-022-05279-x

PR China, Su-XiChang area

Yang, C. et al., Monitoring of Land Subsidence and Ground Fissure Activity Within the Su-XiChang Area Based on Time-Series InSAR. Remote Sens. 2022, 14, 903. https://doi.org/10.3390/rs14040903

https://www.mdpi.com/2072-4292/14/4/903/pdf

USA, Louisiana

Yang, M. et al., Spatial–Temporal Land Loss Modeling and Simulation in a Vulnerable Coast: A Case Study in Coastal Louisiana. Remote Sens. 2022,14, 896. https://doi.org/10.3390/rs14040896

https://www.mdpi.com/2072-4292/14/4/896/pdf

Vietnam, Mekong Delta

Tay Ru Hui et al., Long-term hydrological alterations and the agricultural landscapes in the Mekong Delta: Insights from remote sensing and national statistics Long-term hydrological alterations and the agricultural landscapes in the Mekong Delta: Insights from remote sensing and national statistics.

https://www.researchgate.net/publication/357936425_Long-term_hydrological_alterations_and_the_agricultural_landscapes_in_the_Mekong_Delta_Insights_from_remote_sensing_and_national_statistics_Long-term_hydrological_alterations_and_the_agricultural_land

Modelling

Jiangtao Li, Lin Zhu, Huili Gong, Jiahui Zhou, Zhenxue Dai, Xiaojuan Li, Haigang Wang, Claudia Zoccarato, Pietro Teatini,

Unraveling elastic and inelastic storage of aquifer systems by integrating fast independent component analysis and a variable preconsolidation head decomposition method,

Journal of Hydrology,Volume 606,2022,127420,ISSN 0022-1694,

https://doi.org/10.1016/j.jhydrol.2021.127420.

(https://www.sciencedirect.com/science/article/pii/S0022169421014700)

Mining

Yan, Y et al., Construction of “Space-Sky-Ground” Integrated Collaborative Monitoring

Framework for Surface Deformation in Mining Area. Remote Sens. 2022,14, 840. https://doi.org/10.3390/rs14040840

https://www.mdpi.com/2072-4292/14/4/840/pdf

PR China, Longquan Coal Mine

Jun Zheng, Guoqing Zhou, Yuliang Zhou, Dongfeng Yuan, Tielin Zhao, "Bed Separation Characteristics of an LTCC Panel and Subsidence Controlling Grouting: Case Study of Longquan Coal Mine, China", Shock and Vibration, vol. 2022, Article ID 3837625, 13 pages, 2022. https://doi.org/10.1155/2022/3837625

https://www.hindawi.com/journals/sv/2022/3837625/

PR China, Shanxi Province

Li, S., Wang, J., Zhang, J. et al. Effects of mining and reclamation on the spatial variability of soil particle size distribution in an underground coalmine area: a combination method using multi-fractal and joint multi-fractal theories. Environ Earth Sci 81, 117 (2022). https://doi.org/10.1007/s12665-022-10257-4

PR China, Western China

Gong, Y. et al., Numerical Study on the Surface Movement Regularity of Deep Mining Underlying the Super-Thick and Weak Cementation Overburden: A Case Study in Western China.

Sustainability 2022, 14, 1855. https://doi.org/10.3390/su14031855

https://www.mdpi.com/2071-1050/14/3/1855/pdf

PR China, Xuzhou

Chen, B. et al., Time-Varying Surface Deformation Retrieval and Prediction in Closed Mines Through

Integration of SBAS InSAR Measurements and LSTM Algorithm. Remote Sens. 2022, 14,788. https://doi.org/10.3390/rs14030788

https://www.mdpi.com/2072-4292/14/3/788/pdf

and:

Yuling Du et al.,

DS-InSAR Based Long-Term Deformation Pattern Analysis in the Mining Region With an Improved Phase Optimization Algorithm

https://www.frontiersin.org/articles/10.3389/fenvs.2022.799946/full

From the Press

USA, California

Rice Farming to Restore Soil

In California's Sacramento-San Joaquin Delta, farmers are converting corn fields to rice in an effort to stop subsidence and reduce carbon emissions.

https://www.earthisland.org/journal/index.php/articles/entry/rice-farming-to-restore-soil

USA, California

NEW LETTER: Harder Pushes for 21st Century Satellite Technology to Measure Land Subsidence Nationwide

https://harder.house.gov/media/press-releases/new-letter-harder-pushes-21st-century-satellite-technology-measure-land

USA, Texas

The Harris-Galveston Subsidence District (HGSD) is a special purpose district created by the Texas Legislature in 1975. Working with surface water suppliers the HGSD controls subsidence by managing the use of groundwater resources in Harris and Galveston Counties. In addition HGSD provides water conservation, education, and outreach programs to underscore the importance of water conservation in the community.

https://hgsubsidence.org/

Monitoring

Yu Liang, Kai Gu, Bin Shi, Suping Liu, Jinghong Wu, Yi Lu, Hilary I. Inyang,

Estimation of land subsidence potential via distributed fiber optic sensing,Engineering Geology,

Volume 298,2022,106540,ISSN 0013-7952,

https://doi.org/10.1016/j.enggeo.2022.106540.

(https://www.sciencedirect.com/science/article/pii/S0013795222000254)

Projects

USA, Virginia

Faculty Seed Grant Project

Predictability of Virginia's Coastal Aquifer Response to Sea-level Rise and Water Consumption for Hazard Assessment

This project aims to collect new datasets, build novel models, and perform a pilot study as preparation for an NSF or NASA proposal to predict future hazards associated with depletion of coastal aquifers and sea-level rise, and inform climate change adaptation efforts and relocation plans.

https://www.globalchange.vt.edu/coastal-aquifer-response-to-sea-level-rise/

YOUTUBE

India, Delhi

Land Subsidence: How land is sinking in Delhi Explained

https://www.youtube.com/watch?v=X3V2u9q2dKw&ab_channel=GroundReport