



Newsletter of the Unesco Land Subsidence International Initiative

Vol.41, September/October 2023

Design Standards (ISO)

ISO 16134:2020(en)

Earthquake-resistant and subsidence-resistant design of ductile iron pipelines

<https://www.iso.org/obp/ui/en/#iso:std:iso:16134:ed-2:v1:en>

Modelling

Md Fahim Hasan et al.,

Global land subsidence mapping reveals widespread loss of aquifer storage capacity

<https://www.nature.com/articles/s41467-023-41933-z.epdf>

Monitoring

European Ground Motion Service

<https://land.copernicus.eu/en/products/european-ground-motion-service>



Mission CHORUS Set to Launch in 2025: A New Era in Earth Observation

<https://ts2.space/en/mission-chorus-set-to-launch-in-2025-a-new-era-in-earth-observation/>

Samoa

American Samoa Sea Level Rise Viewer

<https://www.cakex.org/tools/american-samoa-sea-level-rise-viewer>

New Literature

General

Esra Bilgiç et al.,

Effect of Urbanization on Water Resources: Challenges and Prospects

https://link.springer.com/chapter/10.1007/978-3-031-43348-1_4

van Bijsterveldt, C.E.J., Herman, P.M.J., van Wesenbeeck, B.K. et al. Subsidence reveals potential impacts of future sea level rise on inhabited mangrove coasts. *Nat Sustain* (2023).

<https://doi.org/10.1038/s41893-023-01226-1>

Juan José Díaz-Nigenda & Eric Morales-Casique & Mauricio Carrillo-García & Mario Alberto Vázquez-Peña & Oscar Escolero-Fuentes, 2023. "Importance of Aquitard Response Time for Groundwater Management in Multi-Aquifer Systems Subject to Land Subsidence," *Water Resources Management: An International Journal*, Published for the European Water Resources Association (EWRA), Springer; European Water Resources Association (EWRA), vol. 37(13), pages 5367-5378, October.

https://ideas.repec.org/a/spr/waterr/v37y2023i13d10.1007_s11269-023-03611-z.html

Minderhoud et al.,

Science-Informed Management of Groundwater Exploitation to Mitigate Land Subsidence and Relative Sea-Level Rise in Coastal Areas

https://www.researchgate.net/publication/375059388_Science-Informed_Management_of_Groundwater_Exploitation_to_Mitigate_Land_Subsidence_and_Relative_Sea-Level_Rise_in_Coastal_Areas

Torbjorn Tornqvist, Michael Blum

What is coastal subsidence?

<https://eartharxiv.org/repository/view/6100/>

Md Fahim Hasan & Ryan Smith & Sanaz Vajedian & Rahel Pommerenke & Sayantan Majumdar, 2023. "Global land subsidence mapping reveals widespread loss of aquifer storage capacity," *Nature Communications*, *Nature*, vol. 14(1), pages 1-10, December.

https://ideas.repec.org/a/nat/natcom/v14y2023i1d10.1038_s41467-023-41933-z.html

India, Krishna Godavari Basin

Multi-temporal SAR Interferometry (MTInSAR)-based study of surface subsidence and its impact on Krishna Godavari (KG) basin in India: a support vector approach

https://www.researchgate.net/publication/374664708_Multi-temporal_SAR_Interferometry_MTInSAR-based_study_of_surface_subsidence_and_its_impact_on_Krishna_Godavari_KG_basin_in_India_a_support_vector_approach

Indonesia, Riau

Husnul Kausarian et al.,

Analysis of Land Subsidence in Peatlands in the Awareness Area of Pekanbaru, Riau, Indonesia

https://www.researchgate.net/publication/374479988_Analysis_of_Land_Subsidence_in_Peatlands_in_the_Awareness_Area_of_Pekanbaru_Riau_Indonesia

Iran,

Noori, R., Maghrebi, M., Jessen, S. et al. Decline in Iran's groundwater recharge. Nat Commun 14, 6674 (2023). <https://doi.org/10.1038/s41467-023-42411-2>

Iran, Isfahan

Omid Memarian Sorkhabi et al.,

Evaluation of Isfahan City Subsidence Rate Using InSAR and Artificial Intelligence

https://www.researchgate.net/publication/359544131_Evaluation_of_Isfahan_City_Subsidence_Rate_Using_InSAR_and_Artificial_Intelligence

Italy, Lipary Island

daniele casalbore

Flooding scenarios due to land subsidence and sea-level rise: a case study for Lipari Island (Italy)

https://www.academia.edu/107451515/Flooding_scenarios_due_to_land_subsidence_and_sea_level_rise_a_case_study_for_Lipari_Island_Italy_?f_ri=2795

Italy, Palermo

Nicola Angelo Famiglietti et al.,

What Have We Learned from the Past? An Analysis of Ground Deformations in Urban Areas of Palermo (Sicily, Italy) by Means of Multi-Temporal Synthetic Aperture Radar Interferometry Techniques

<https://www.mdpi.com/2076-3263/13/10/298>

Korea

Jang, J., Lee, JY., Redwan, M. et al. Hydrogeological characteristics and water chemistry in a coastal aquifer of Korea: implications for land subsidence. Environ Monit Assess 195, 1289 (2023).

<https://doi.org/10.1007/s10661-023-11926-y>

Malaysia

Atriyon Julzarika

LAND SUBSIDENCE DYNAMICS IN MALAYSIA BASED ON TIME-SERIES VERTICAL DEFORMATION USING MODIFIED D-INSAR SENTINEL-1

https://www.researchgate.net/publication/374266801_LAND_SUBSIDENCE_DYNAMICS_IN_MALAYSIA_BASED_ON_TIME-SERIES_VERTICAL_DEFORMATION_USING_MODIFIED_D-INSAR_SENTINEL-1

Pakistan

Jennifer H. Weeks et al.,

Sea-Level Rise in Pakistan: Recommendations for Strengthening Evidence-Based Coastal Decision-Making

<https://www.mdpi.com/2306-5338/10/11/205>

PR China, Guangdong-Hong Kong-Macao Greater Bay Area

Zherong Wu, Xinyang Zhang, Jiannan Cai, Mei-Po Kwan, Hui Lin & Peifeng Ma (2023) Understanding spatially nonstationary effects of natural and human-induced factors on land subsidence based on multi-temporal InSAR and multi-source geospatial data: a case study in the Guangdong-Hong Kong-Macao Greater Bay Area, *International Journal of Digital Earth*, 16:2, 4404-4427, DOI: 10.1080/17538947.2023.2271882

<https://www.tandfonline.com/action/showCitFormats?doi=10.1080%2F17538947.2023.2271882>

PR China, Heze City

Xiao Yang, Chao Jia, Hao Sun, Tian Yang, Yue Yao,

Integrating multi-source data to assess land subsidence sensitivity and management policies, *Environmental Impact Assessment Review*,

<https://doi.org/10.1016/j.eiar.2023.107315>.

(<https://www.sciencedirect.com/science/article/pii/S0195925523002810>)

PR China, Huanglong City

Peicheng Qiu et al.,

Land Subsidence Prediction Model Based on the Long Short-Term Memory Neural Network Optimized Using the Sparrow Search Algorithm

<https://www.mdpi.com/2076-3417/13/20/11156>

PR China, Songyan City

Ding, Q., Wang, F., Huang, X. et al. Monitoring and Analysis of Surface Deformation in Songyan City, Jilin Province Based on Time Series InSAR. *J Indian Soc Remote Sens* (2023).

<https://doi.org/10.1007/s12524-023-01746-5>

PR China, Xi'an

Xinxin Guo et al.,

A Multifactor-Based Random Forest Regression Model to Reconstruct a Continuous Deformation Map in Xi'an, China

<https://www.mdpi.com/2072-4292/15/19/4795>

USA, New York

BRETT BUZZANGA et al.,

Localized uplift, widespread subsidence, and implications for sea level rise in the New York City metropolitan area

https://www.google.com/search?q=land+subsidence&sca_esv=569212662&rlz=1C1GCEA_enNL857NL857&source=Int&tbs=qdr:d&sa=X&sqi=2&ved=2ahUKewj0uYXH982BAxU8hf0HHfpkC8oQpwV6BAgFECQ&biw=1680&bih=933&dpr=1

Vietnam, Mekong Delta

Kathryn A. Powlen et al.,

An integrated framework for examining groundwater vulnerability in the Mekong River Delta region

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0292991>

From the Press

Iran, Persepolis

Iran: Land Subsidence Within 300 Meters of Famous Persepolis Site

<https://iranfocus.com/life-in-iran/50006-iran-land-subsidence-within-300-meters-of-famous-persepolis-site/>

The Netherlands

Climate and water-robust: the Low-Lying Netherlands in 2050 and beyond

<https://www.deltares.nl/en/expertise/projects/climate-and-waterrobust-low-lying-netherlands-2050>

USA

USA groundwater reserves being depleted at alarming rate

<https://geographical.co.uk/news/us-groundwater-reserves-being-depleted-at-alarming-rate>

Vietnam, Ho Chi Minh City

SAWACO takes steps to address overexploitation of underground water

<https://vietnamnews.vn/society/1595292/sawaco-takes-steps-to-address-overexploitation-of-underground-water.html>

Vietnam, Mekong Delta

Uncovering the Mekong Sand Debt

<https://www.deltares.nl/en/expertise/projects/uncovering-mekong-sand-debt>

Special Issue

Special Issue "Novel Approaches for Earthquake and Land Subsidence Prediction"

A special issue of Applied Sciences (ISSN 2076-3417). This special issue belongs to the section "Earth Sciences and Geography".

Deadline for manuscript submissions: 20 January 2024

https://www.mdpi.com/journal/applsci/special_issues/U8G6SV8C04

Webinar

COASTAL AREAS OF THE GULF OF GUINEA FACED WITH RELATIVE SEA-LEVEL RISE

On Wednesday, November 22th

<https://www.afd.fr/en/actualites/agenda/coastal-areas-gulf-guinea-faced-relative-sea-level-rise>