Newsletter of the Unesco Land Subsidence International Initiative
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Special Issue, Call for Abstracts

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Global Changes and Environmental Impacts on Soil, Rocks, Water, and Air Sustainability

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Deadline for manuscript submissions:
22 October 2023

Message from the Guest Editors

Climate change has had a major impact on the earth. These impacts are directly reflected in the weather-related natural hazards. Over the years, these hazards became more disastrous to various aspects of human life. This Special Issue encompasses academic articles and/or reviews:

- Highlighting the severe impacts related to natural hazards and climate change.
- Remote sensing technologies' role in surveying, analyzing, mapping, and interpreting climate change—natural hazard impacts and/or relationships.
- Studies related to prevention, damage mitigation, and risk management of natural hazard events.
- All aspects of geological, geomorphological, climate change, and natural hazards.

This Special Issue focus on research that highlights the relationship between climate change and natural hazards. We encourage researchers in this Special Issue to publish their experimental, computational, and theoretical research relating to landslides, erosion, earthquakes, storm surges, floods, and land subsidence, in addition to vulnerability and risk assessment.

mdpi.com/si/153673

Special Issue

https://www.mdpi.com/journal/sustainability/special_issue_flyer_pdf/0KKL3YLY76/web

Towards a Better Understanding of the Correlation Between the Subsidence Pattern and Land Use Type

Abstract Submission Deadline 27 February 2023
Manuscript Submission Deadline 27 June 2023

https://www.frontiersin.org/research-topics/52018/towards-a-better-understanding-of-the-correlation-between-the-subsidence-pattern-and-land-use-type

New Literature

Chile, Santiago

Felipe Orellana et al.,

High-Resolution Deformation Monitoring from DInSAR: Implications for Geohazards and Ground Stability in the Metropolitan Area of Santiago, Chile

https://www.mdpi.com/2072-4292/14/23/6115

Indonesia

Dwi Sarah et al.,

Urgent need for land subsidence education in Indonesia to increase community awareness and preparedness

AIP Conference Proceedings 2468, 060037 (2022); https://doi.org/10.1063/5.0102454

Indonesia, Jakarta

Hasanuddin Z. Abidin et al.,

Land subsidence characteristics of the Jakarta basin (Indonesia) and its relation with groundwater extraction and sea level rise

https://s3-euw1-ap-pe-df-pch-content-store-p.s3.eu-west-1.amazonaws.com/9780429206436/3b2683ad-ad9b-4148-9687-1c81c65ec908/relatedobjects/chapters/chapter013/9780429206436-13.pdf?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAQFVOSJ576KNC54E4%2F20221216%2Feu-west-1%2Fs3%2Faws4_request&X-Amz-Date=20221216T000209Z&X-Amz-Expires=172800&X-Amz-Signature=6813b8688d5faaad86a1c3c1d13f3ed97b2cf0ac7c406b116caaec708d17979d&X-Amz-SignedHeaders=host&response-content-disposition=attachment%3B%20filename%3D%2210.1201_b10530-13_chapterpdf.pdf%22

Iran, Central Iran

Sadeghi, AR., Hosseini, S.M. Assessment and delineation of potential groundwater recharge zones in areas prone to saltwater intrusion hazard: a case from Central Iran. Environ Monit Assess 195, 203 (2023). https://doi.org/10.1007/s10661-022-10778-2

Iran, Hashtgerd Plain

Khoshlahjeh Azar, M., Shami, S., Nilfouroushan, F. et al. Integrated analysis of Hashtgerd plain deformation, using Sentinel-1 SAR, geological and hydrological data. Sci Rep 12, 21522 (2022). https://doi.org/10.1038/s41598-022-25659-4

Italy, Venice

Geotechnics of Venice and Its Lagoon

By Paolo Simonini

 Available for pre-order on May 10, 2023. Item will ship after May 31, 2023

ISBN 9781032049564

May 31, 2023 Forthcoming by CRC Press

https://www.routledge.com/Geotechnics-of-Venice-and-Its-Lagoon/Simonini/p/book/9781032049564

The Netherlands, Western Scheldt Estuary

Steven A.H. Weisscher et al.,

Transitional polders along estuaries: Driving land-level rise and reducing flood propagation,

Nature-Based Solutions, Volume 2, 2022, 100022, ISSN 2772-4115, https://doi.org/10.1016/j.nbsj.2022.100022.

(https://www.sciencedirect.com/science/article/pii/S2772411522000143)

PR China, Beijing

Lei, K., Ma, F., Chen, B. *et al.* Effects of South-to-North Water Diversion Project on groundwater and land subsidence in Beijing, China. *Bull Eng Geol Environ* **82**, 18 (2023). https://doi.org/10.1007/s10064-022-03021-2

Li, F., Liu, G., Tao, Q. et al. Land subsidence prediction model based on its influencing factors and machine learning methods. Nat Hazards (2022). https://doi.org/10.1007/s11069-022-05796-9

PR China, Heifa

Chaoqun Teng et al.,

Urban surface deformation monitoring and prediction by integrating SBAS-InSAR and Elman neural network

https://doi.org/10.1080/00396265.2022.2157119

PR China, Ningbo

Land Subsidence Characteristics and Numerical Analysis of the Impact on Major Infrastructure in Ningbo, China

https://econpapers.repec.org/article/gamjsusta/v_3a15_3ay_3a2022_3ai_3a1_3ap_3a543-_3ad_3a1018236.htm

USA, California

Liu, PW., Famiglietti, J.S., Purdy, A.J. *et al.* Groundwater depletion in California's Central Valley accelerates during megadrought. *Nat Commun* **13**, 7825 (2022). https://doi.org/10.1038/s41467-022-35582-x

Monitoring

Bin Shi et al.,

Soil Stratum Tides

https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2022GL101621

Describes monitoring of the tidal effect on ground elevation.

Peat

Learning from experience doing peatland research in developing countries

🕐 Tuesday 9 May 2023, 10am to 11am   🏷 Free admission, booking required

📍 Online only

Book tickets

Event details

Learn from three researchers who have spent their careers working in developing countries. They will discuss challenges accessing sites, navigating cultural sensitivities and dealing with conflict. The session includes a case study of research on GHG emissions and land subsidence and flooding associated with plantation on tropical peatland, that led to negative reactions and other unforeseen negative consequences.

https://www.york.ac.uk/yesi/events/2022/learning-from-experience/

Department of Earth Sciences
Utrecht University

Utrecht University has great ambitions for its teaching quality and study success rates. This also applies to its clear research profiles which are centred around four themes: Dynamics of Youth, Institutions, Life Sciences and Sustainability. Utrecht University plays a prominent role in our society and contributes to finding the answers to topical and future societal issues. Everyone deserves to feel at home at our university. We welcome employees with a wide variety of backgrounds and perspectives.

PhD position on probabilistic subsidence predictions for building damage (4 years)

The Department of Earth Sciences is now looking for a highly-motivated, high-potential applicant to fill a PhD position on human-induced subsidence and building damage. The PhD research will be conducted in collaboration with Padova University and research institute TNO (Netherlands Organisation for Applied Scientific Research).

Subsidence-induced damage to the built environment is a worldwide issue, especially in low-lying urbanized coastal zones worldwide such as Venice (Italy) and the Netherlands. In the Netherlands alone, estimated costs of subsidence on buildings and infrastructure are in the order of tens of billions in the coming decades. The built environment can be damaged by subsidence induced by subsurface activities ranging from groundwater level management to deep resource extraction. TNO has set-up an Early Research Programme (ERP) "Subsidence and Building Damage", of which this PhD will be part of. In this programme, the know-how necessary to develop a model chain for predicting subsidence-induced damage to the built environment will be developed. The key scientific breakthrough is to establish causal relationships between different sources of subsidence and resulting damage to the built environment. To reach this objective, models (physics-based and machine learning-based) and observations (satellite remote sensing and in-situ measurements) will be combined throughout data assimilation schemes.

The research team includes Prof Jan-Diederik van Wees (TNO, UU), Prof Pietro Teatini (University of Padova), Dr Ylona van Dinther (UU), Dr Thibault Candela (TNO), and Dr Claudia Zoccarato (University of Padova). The research will mainly be performed at Utrecht University and TNO, but extended stays at University of Padova are included in the project planning.

Up to 10% of the candidate's time will be dedicated to assisting in the BSc and MSc teaching programmes of the Department of Earth Sciences at UU. A personalised training programme will be set up, mutually agreed on recruitment, which will reflect the candidate's training needs and career objectives.

https://www.earthworks-jobs.com/geoscience/utrecht22122

The application deadline is **February 20th, 2023**. Evaluations and interviews are planned soon thereafter, such that the position can start as soon as possible.

USA, Houston

Water agencies debate ground subsidence amid new studies

https://communityimpact.com/houston/the-woodlands/government/2022/12/14/water-agencies-debate-ground-subsidence-amid-new-studies/