



GRID Newsletter Q3 2026

June 15, 2026

Welcome to the Q2 Newsletter! GRID Coordinator Visits GGU

Dear readers,

In Q3 2026, GRID demoed a smartphone AI for soil grain-size at the Long Night of Research, the coordinator Enrico Soranzo visited GGU and Goldbeck, NGI's Zhongqiang Liu attended 5ISMLG in Hong Kong. A Kaggle Competition competition launched and Deliverable 2.1 was published. New research shows structured material inhomogeneity drives shear band formation. Stay on the GRID!

Cheers,

Enrico Soranzo
GRID project coordinator

GRID at the Long Night of Research



Enrico Soranzo demonstrating grai, the grading AI technology developed within GRID.

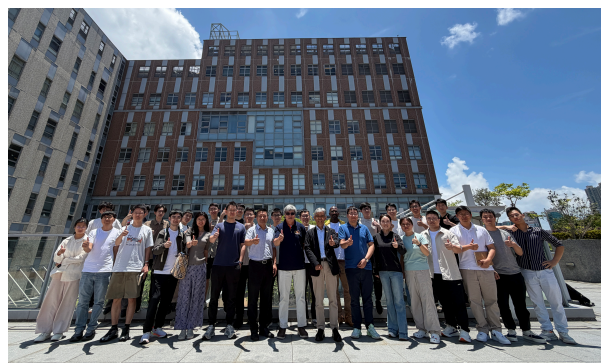
GRID project coordinator Enrico Soranzo took part in the Long Night of Research at BOKU, showcasing the use of AI to predict the particle size distribution of soils through smartphone pictures.



Simon Buß of GGU (left) and Enrico Soranzo of BOKU standing next to the GRID totem at the company's premises in Braunschweig, Germany.

Project coordinator Enrico Soranzo visited GGU on secondment. Together with GGU CEO Simon Buß, they visited Goldbeck to explore AI in construction.

Zhongqiang Liu (NGI) at 5ISMLG



Zhongqiang Liu of NGI (in the centre) portraited together with faculty and students at Hong Kong Polytechnic during his secondment to attend the 5ISMLG symposium.

Zhongqiang Liu (NGI) was seconded to Hong Kong Polytechnic to attend the 5ISMLG, the flagship ISSMGE TC309 conference on machine learning in geoscience.

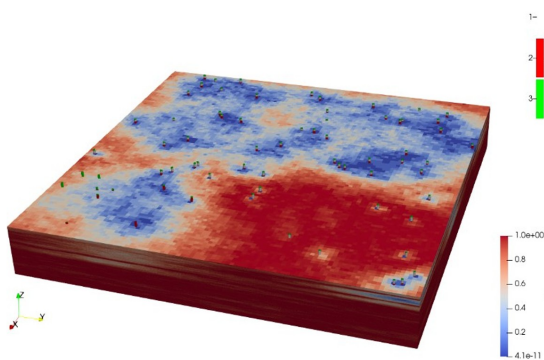
GRID Launches Kaggle Competition



Title picture of the Kaggle Competition launched within GRID.

A Kaggle Competition has been launched within the GRID project with a \$ 500 prize to predict soil grain size distributions from images.

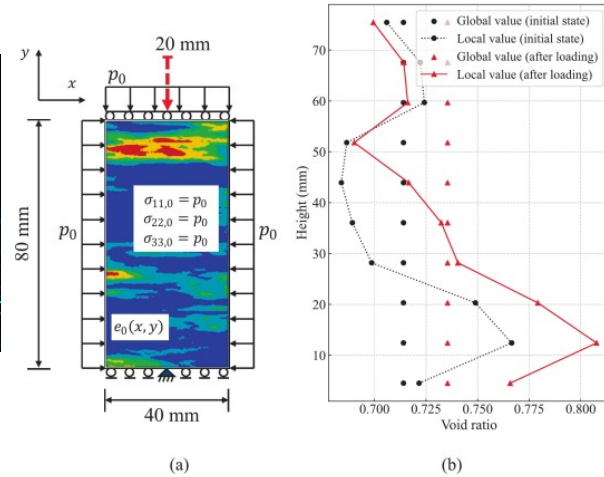
Deliverable 2.1 Published: Uncertainty Quantification & Risk Management



Voxel-wise entropy visualization of a 3D probabilistic subsoil model.

Deliverable 2.1 was published in June. It presents a framework to combine SISIM and SGSIM to generate multiple conditional realizations and quantify voxel-wise uncertainty via class probabilities, entropy, and variability for decision support. Its workflow spans data prep, variography, kriging, simulation, aggregation and updating, with limits and recommended sensitivity checks and transparent documentation.

Paper spotlight: Revisiting strain localization from the view of structured inhomogeneity



One realization of a strain localization simulation.

The provided research paper examines strain localization in sandy materials, specifically focusing on how structured inhomogeneity within a specimen's initial state triggers the formation of shear bands. By utilizing a conditional random field (CRF) approach, the authors generate realistic, spatially correlated distributions of the void ratio to simulate natural material heterogeneity. These simulations demonstrate that even basic constitutive models can replicate complex macroscopic deformation patterns when the initial internal structure is accurately represented. The study utilizes finite element modeling (FEM) under plane strain conditions to show that spatial fluctuations in density govern the initiation and evolution of localized failure zones. Ultimately, the research highlights the necessity of accounting for material variability in laboratory test interpretations and the calibration of geotechnical models. The authors propose that treating laboratory specimens as boundary value problems rather than idealized, uniform elements provides a more accurate understanding of soil mechanics.

For further info, please see: [Zihui Wang, Roberto Cudmani, Revisiting strain localization from the view of structured inhomogeneity, Computers and Geotechnics, Volume 190, 2026.](#)

Upcoming Events

Catch up with GRID at these upcoming events:



Rome: September tbd, 2026



Berlin: September 22–25, 2026



Leipzig: November 12–13, 2026

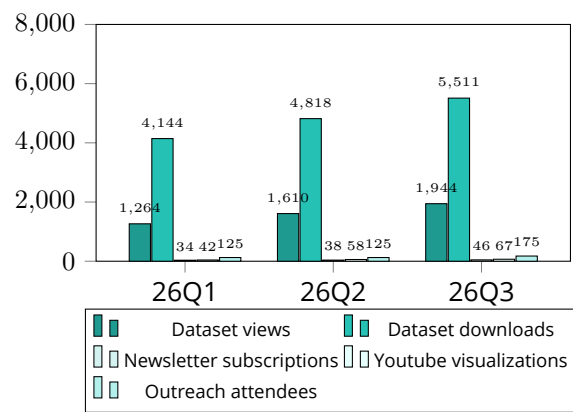
Spotlight on Research

Our recent publications include:

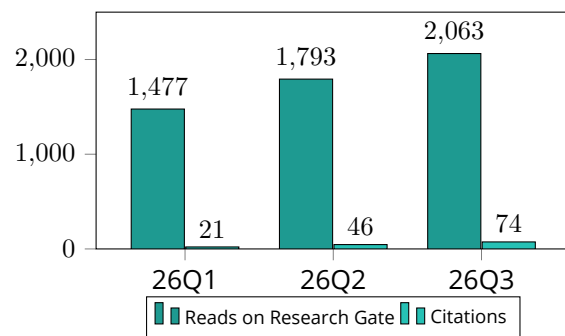
Revisiting strain localization from the view of structured inhomogeneity



Engaging the Community



Communication KPIs of the GRID project



Dissemination KPIs of the GRID project

Get Involved

Join us in revolutionizing geotechnics and AI. Visit our website at grid.boku.ac.at.