

Call for Participation – GRID Student Contest

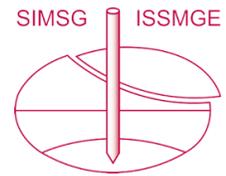
TU Graz, 13–16 October, 2026

We are pleased to announce a **student contest** on Machine Learning (ML) algorithms for soil shear parameters prediction based on curated datasets, co-organized by the [MSCA Staff Exchange project GRID](#) ISSMGE TC304 and TC309, and JTC2.

The prize ceremony will be held at the [ICITG conference](#) in Graz on October 13 – 16, 2026 at TU Graz in Austria.

Participants are invited to submit a brief proposal report in English (maximum of 10 pages), covering the following key elements:

1. Introduction (motivation, objectives, and scope of the proposed machine learning approach for predicting the shear parameters)
2. Literature review (relevant studies and advancements in methods for shear parameters prediction to establish a strong foundation for the proposed work.
3. Data interpretation and outlier detection (methodologies for data interpretation and cleaning, identification of outliers)
4. ML algorithm (present and discuss the algorithm proposed for predicting the shear parameters, its strengths and weaknesses)
5. External input (try to incorporate supplementary data from external sources to improve the robustness and validation of the algorithm)
6. Discuss limitations and suggest potential directions for future research
7. Deployment (outline a plan for deploying the ML model e.g., with a user-friendly interface)
8. Summarize the main findings, their implications and the overall significance of the ML approach



1 Objective

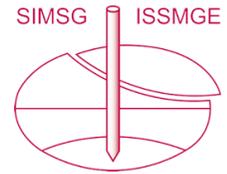
The objective of the contest is to build predictive models for the peak values of cohesion and friction angles.

2 Definitions

- Co (%) content of cobbles
- Gr (%) content of gravel
- Sa (%) content of sand
- Si (%) content of silt
- Cl (%) content of clay
- dmax (mm) maximum particle size
- CU (-) uniformity coefficient
- CC (-) curvature coefficient
- d10 (mm) particle diameter at which 10% of the soil is finer
- d50 (mm) particle diameter at which 50% of the soil is finer
- RHS (g/cm³) soil particle density
- RHPRUSP (g/cm³) Proctor density
- WPRUSP (%) optimum water content
- wL (%) liquid limit
- wP (%) plastic limit
- wS (%) shrinkage limit
- IP (%) plasticity index
- w (%) natural water content
- IC (-) consistency index
- IA (-) activity index
- k10 (m/s) hydraulic conductivity



GRID



- c (kPa) Peak value of cohesion
- phi (°) Peak value of friction angle
- cr (kPa) Residual value of cohesion
- phir (°) Residual value of friction angle

3 Important dates:

- Deadline for proposals: **31.01.2026**
- Notification to selected teams: **31.03.2026**
- Submission of presentation slides: **15.09.2026**
- Contest & prize ceremony: **ICITG26 at TU Graz, 13-16.10.2026**

[ICITG](#) registration from **31.03.2026** (please check dates on website)

4 Submission

To submit the proposal, please

1. write to: lukas.leibold@students.boku.ac.at
(CC to: enrico.soranzo@boku.ac.at)
2. specify the name of your organization, your supervisor and the names of the student team members (**maximum four members**)

Good luck to all participants!