

The XVII European Conference on Soil Mechanics and Geotechnical Engineering 2019

Themes for Abstract Submission

Dear authors

The ECSMGE embraces all aspects of geotechnical engineering. Therefore, we welcome authors from various fields and at various career stages. The conference welcomes submissions demonstrating scientific advancement, technical innovation, challenges and management of geotechnical engineering projects.

Geotechnical engineering covers a wide ground, including structures and infrastructures, environmental, social and economic sustainability, preservation, natural landscape, geo-energy and, last but not least, effective measures for the mitigation of natural geo-hazards through the use of geotechnical engineering knowledge, tools and skills.

Theme A: Modelling and experimental assessment of geomaterials

A.1. Investigation by laboratory tests	Equipment, apparatus, procedures, interpretation and parameters representativeness and reliability.
A.2. Investigation by in situ tests	Equipment, apparatus, Intrusive tests, geo-physical tests, procedures, validation, interpretation and parameter representativeness and reliability.
A.3. Physical modelling and large scale tests	Model tests, centrifuge tests, load tests, well tests, equipment, apparatus, procedures, validation, interpretation and parameter representativeness and reliability.
A.4. Theoretical modelling	Analytical, numerical, continuous approach, discrete element approaches, constitutive laws, applicability, reliability, effectiveness and validation.
A.5. Design parameters	Identification, selection, limit states, regulations, rules and guidelines.

Theme B: Geotechnical construction and soil improvement

B1. Foundations, excavations and earth retaining structure.	Shallow and deep foundations, retaining and diaphragms wall, basements, deep excavations, tunnels and temporary works.
B.2. Slopes stabilization and earthworks	Cut slopes, earthworks and embankments, dams, tailings dams, dykes and levees, slope failure repair and remediation.
B.3. Ground reinforcement and ground improvement	Soil reinforcement, ground anchors, geosynthetics, grouting, densification, thermal treatment (artificial ground freezing), bio-chemical geotechnics and other forms of ground treatment.
B.4. Structures and infrastructure	Roads, highways and railways; bridges; tunnels; canals and waterways, power lines and pipelines, mega cities and smart cities.
B.5. Near shore and offshore structures, and the marine environment	Flood barrages, sea breakwater, piers, estuarine airports, ports, dredging, coastal defences, undersea pipelines, and oil and gas extraction installations.



GEOTECHNICAL ENGINEERING

Foundation of the future

Theme C: Geohazards, earthquakes and mitigation

C.1. Landslides and other solid flows	Slow earth and rock movements, natural slopes, debris flows, mudflows, rock falls, snow and ice avalanches, volcanoes, hazard and risk evaluation and mapping, disaster response and recovery, effects of climate and associated global changes.
C.2. Earthquake engineering and soil dynamics	Identifications and characterization of seismic areas and dynamic soil properties, liquefaction, hazard and risk mapping, disaster response and recovery.
C.3. Floods, erosion and scours	Effects of climate and associated global change, river and sea floods, tsunami, sea level change, subsidence, scour, sinkholes, cavities by anthropomorphically-induced events.
C.4. Hazard and risk management	Vulnerability and fragility of buildings and infrastructure to hazards and hazard and risk management and mitigation.

Theme D: Environment, water and energy

D.1. Environmental geotechnics	Waste management, landfill design, reused/recycled materials, sustainability, contaminated land, active and passive barriers for contaminant control, coupled flow of mass and energy in fine grained soils, environmental risk analysis.
D.2. Groundwater and hydrology	Groundwater modelling, groundwater abstraction and recharge, hydraulic barriers, groundwater treatment, dewatering, changes in groundwater regime.
D.3. Energy, incl. geothermal energy	Geothermal energy, heat ground source, heat pumps, energy piles, tunnel linings and other underground constructions for energy storage and optimized exploitation, wind farms and wind turbines, carbon dioxide sequestration, tidal and wave power generation.

Theme E: Historical heritage preservation

E.1. Investigation, characterization and testing	Interactions and cooperation among the experts of the different skills, soil, foundation and structure investigation and characterization, modelling of soil, foundation and structure interactions.
E.2. Case histories	Historic buildings, monuments, retrofitting, reinforcement and reuse, archaeology.

Theme F: Special and specific Issues

F.1. Problematic materials and environments	Glacigenic and periglacial materials, peats, aeolian deposits, natural muds and muds from industrial waste, collapsing soils, swelling soils, weak rocks, permafrost and loss of permafrost, and tropical soils and highly weathered materials, unsaturated soils.
F.2. Developments and innovations in geotechnical engineering, education and practice	Codes and standards (e.g. EC7 and EC8), BIM, GIS, smart instrumentation, engineering and project risk assessment, management and mitigation, stakeholder collaboration, interactive design (observational method), safety and serviceability, environmental impact assessment, educational development, retraining and e-learning.
F.3. Forensic geotechnical engineering	Geotechnical failures and criminology including case histories.