

PRELIMINARY PROGRAMME

Monday 1st July (morning)

Keynote Lecture: **Recent advances in understanding and improving the performance of lining and capping systems for landfill and mining applications** by K. Rowe

Discussion Leader: F. Verga
Paper Presentations

Session 1 Landfill bottom and side lining systems

General Report: **Membrane behavior in engineered bentonite-based containment barriers** by C. Shackelford
Specific Lecture: **Osmotic phenomena** by A. Dominijanni
Session Report by M. Touze-Foltz
Discussion Leader: M. Malusis
Paper Presentations

Session 6 Natural and anthropogenic bio-chemical processes within soils and rocks

General Report: **Bio-geo-chemical processes for improvement of soil engineering properties with focus on microbially induced calcite precipitation** by J. DeJong
Specific Lecture: **Modification of clay consolidation properties using microbial gas production** by A. Puzrin
Session Report by C. Jommi
Discussion Leader: E. Kavazanjian
Paper Presentations

Monday 1st July (afternoon)

Session 2 Landfill waste characterization

General Report: **Coupled degradation, settlements and liquid-gas flows within municipal solid waste landfills** by W. Powrie
Specific Lecture: **Large scale laboratory tests on MSW** by J.P. Gourc
Session Report by S. Foti
Discussion Leader: T. Katsumi
Paper Presentations

Wednesday 3rd July (morning)

Keynote Lecture: **Reactive permeable barriers to capture fumes rising up to the soil surface from groundwater plume** by M. Hassanizadeh

Session 3 Stability and settlement analysis of landfills

General Report: **Recent findings on mechanical response of municipal solid waste** by D. Zekkos

Session 7 Characterization of polluted sites and related aquifers

General Report: **Multiphase aspects of soil contamination by immiscible petroleum hydrocarbons** by J.P. Delage
Specific Lecture: **Injection of zero-valent iron micro- and nano-particles for groundwater remediation: laboratory tests and transport modelling** by R. Sethi

Specific Lecture: **Mass loss and volume change: from sand-salt analogues to MSW** by J. Mc Dougall
Session Report by G. Viggiani
Discussion Leader: N. Dixon
Paper Presentations

Session Report by D. Singh
Discussion Leader: H. Thomas
Paper Presentations

Tuesday 2nd July (morning)

Keynote Lecture: **Coupled modeling of barriers for radioactive waste disposal** by A. Gens

Wednesday 3rd July (afternoon)

Session 8 Degradation extraction and inerting systems for the reclamation of polluted sites

General Report: **Electrokinetic remediation of soils at complex contaminated sites: technology status, challenges, and opportunities** by K. Reddy
Specific Lecture: **Gas, water and NAPL distribution and flows in porous media** by S. Olivella
Session Report by E. Romero
Discussion Leader: H. K. Komine
Paper Presentations

Session 4 Linings for radioactive waste and capping systems for landfills and polluted sites

General Report: **Capillary and monolithic capping** by C. Benson
Specific Lecture: **Modeling the coupled chemo-mechanical behaviour of swelling clays** by G. Musso
Session Report by H. Rahardjo
Discussion Leader: C. Ng
Paper Presentations

Session 9 Active and passive barriers for polluted sites

General Report: **Cement bentonite cutoff walls for polluted sites** by E.K. Soga, J. Evans
Specific Lecture: **Migration of aggressive contaminant through cement-bentonite slurry walls** by E. Fratalocchi
Session Report by N. Moraci
Discussion Leader: E. Boscov
Paper Presentations

Tuesday 2nd July (afternoon)

Session 5 Underground energy issues

General Report: **Advances in the analysis of thermo-active foundations** by L. Laloui
Specific Lecture: **Soil effective thermal conductivity from energy pile thermal tests** by M. Bouazza
Session Report by R. Katzenbach

PRESENTATION

Environmental Geotechnics currently has to deal with numerous aspects and fields, such as the characterization of polluted sites and landfill waste, the design of containment systems for subsoil pollutant control, radioactive waste disposal, geo-energy exploitation and bacteria-driven soil modification, among others.

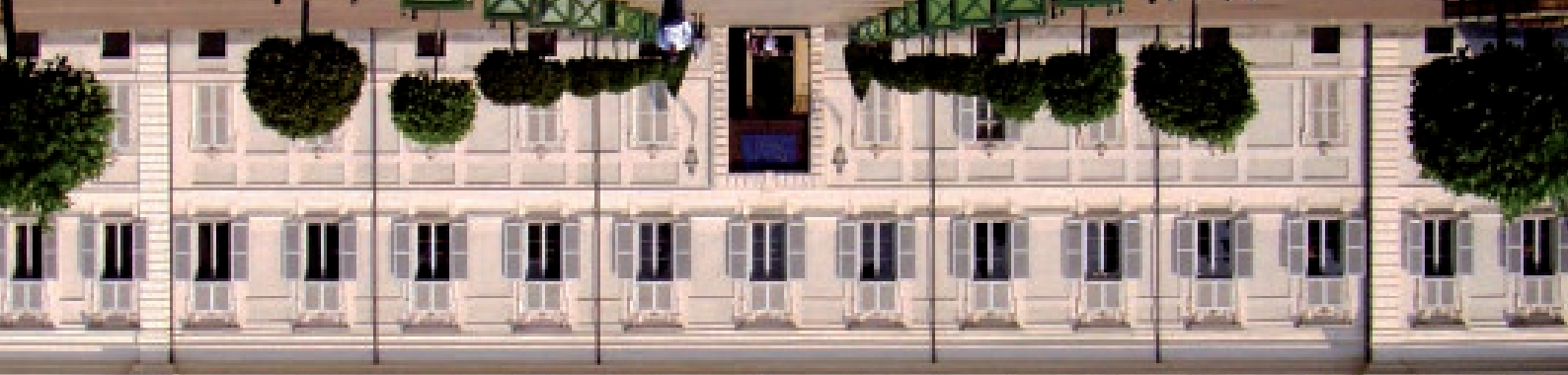
In order to obtain reliable and effective predictions of the actual behavior and performance of all these very complex systems, theoretical and experimental research and advanced design procedures needs to take into account hydro-bio-chemo-physical and mechanical phenomena and processes at very different geometrical scales and, above all, in coupled conditions.

Over the last few decades, these requirements have stimulated substantial advancements from the classical soil and rock mechanics background in terms of generalization, extension and refinement of theoretical modeling and experimentation capabilities.

Today, the possibility of further progresses in the scientific state of the art and the substantial advancements of practical applications in an environmentally sustainable manner are closely related to the development of a shared knowledge among the different basic and applied sciences and technologies. The International Society for Soil Mechanics and Geotechnical Engineering

(ISSMGE) contributed to these developments by an ad hoc Committee (TC 215 – Environmental Geotechnics - formerly TC 5), which was established under the ISSMGE presidency of Prof. M. Jamiolkowski (1994-1997). Since then, a number of conferences, symposia and workshops have been organized and they have attracted large audiences that have always taken part in lively, interesting and useful discussions. In particular, the main periodic International Conference of Environmental Geotechnics (TC 215 - ICEG) deserves mentioning, as it reached its 6th edition in New Delhi, India (2010).

Within this framework, the international symposium organized by ISSMGE TC 215 in Torino (Italy) in July 2013, has been planned as a unique event which will be specifically focused on the Coupled Phenomena in Environmental Geotechnics (from theoretical and experimental research to practical applications). In particular, the symposium will have the aim of discussing and sharing knowledge, skills and front edge research activities in the fields pertaining to theoretical aspects, experimental evidence and already operating, in progress and/or possible practical applications, looking not only inside the geotechnical community but also at related and complementary areas and disciplines.



1 – 3 July 2013
Politecnico di Torino (Italy)

COUPLED PHENOMENA IN ENVIRONMENTAL GEOTECHNICS (CPEG) from theoretical and experimental research to practical applications

a TC 215 Symposium



ASSOCIAZIONE GEOTECNICA ITALIANA

UNDER THE AUSPICES OF



INTERNATIONAL SOCIETY
OF SOIL MECHANICS
AND GEOTECHNICAL ENGINEERING

ENDORSED BY



POLITECNICO DI TORINO



INTERNATIONAL GEOSYNTHETICS SOCIETY

IMPORTANT DATES

Full paper submission: 31st December 2012

Full paper acceptance: 28th February 2013

Early bird registration: 30th April 2013

MAIN TOPICS

1. Landfill waste characterization
2. Stability and settlement analysis of landfills
3. Landfill bottom and side lining systems
4. Capping systems for landfills and polluted sites
5. Geosynthetics in environmental geotechnics
6. Characterization of polluted sites and related aquifers
7. Active and passive barriers for polluted sites
8. Degradation, extraction and inerting systems for the reclamation of polluted sites
9. Radioactive waste disposal
10. Underground energy issues
11. Natural and anthropogenic bio-chemical processes within soils and rocks

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