

## LECTURE SESSIONS (LeS)

A Lecture Session (LeS) includes 4 oral presentations of 20 min. each. After each presentation, 2-3 minutes will be dedicated to questions from the audience.

### Theme A: Policies, strategies, legislation, regulations, guidelines, etc.

#### LeS A.1 EU dimension

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Sagitarius

Chairman : H. Kasamas

- Marmo (EC/ Europa)  
*Soil contamination in the new EU Soil Policy – KEYNOTE lecture*
- Vegter (COMMON FORUM, NL)  
*Evolution of contaminated land policies in Europe: Towards a common flexible framework or a mandatory uniform approach?*
- Haemers (SouRCE, Belgium)  
*A sustainable European legal framework in Europe: The contractors' position*
- Fokkens (Foundation for the Remediation of Dutch Railway Sites, NL)  
*International railway union preparing for sustainable land use*

#### LeS A.2 International dimension

Tuesday, 3 June, 16.00 – 17.30 hrs, Hall Sagitarius

Chairman: W. Blum

- Beaulieu (Environment and Parks Ministry, Canada)  
*The Canadian policies on accounting for costs and liabilities related to governments owned contaminated sites*
- Ogata, Masamichi (Geo-Environmental Protection Center (GEPC), Japan)  
*Soil environmental business in Japan*
- Rodrigues, Pereira, Duarte (University of Aveiro, Portugal), Hursthouse, (University of Paisley, UK)  
*An information framework for supporting the implementation of the EU thematic strategy on soil protection in Portugal*
- Jeong (Kunsan National University, Korea), Youn-Joo An (Konkuk University, Korea), Tae-Seung Kim (National Institute of Environmental Research, Korea)  
*Construction of the chemical ranking of soil pollution substances (CROSS) and development of the Korean priority list of soil contaminants using CROSS*

#### LeS A.3 Policy formulation and performance

Thursday, 5 June, 11.00 – 12.30 hrs, Hall Libra

Chairman: M. Beaulieu

- Dries, Ceenaeme, Dedecker, De Naeyer, Gommeren, Van Dyck (OVAM, Belgium)  
*Flanders soil policy: where remediation and land management meet*
- Pruijn, Walthaus (VROM, NL)  
*Sustainable reuse of lightly contaminated soil and sediment as part of the soil protection policy*
- Bertrand, Wahl (Minister of Environment, Belgium)  
*Contaminated land management policy in the urban region of Brussels*
- Hill, Scott (Shell Global Solutions, UK)  
*Site management in an evolving risk-based regime – examples from Italy*

#### LeS A.4 Soil quality objectives

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Scorpio

Chairman : F. Quercia

- Swartjes (RIVM, NL), Carlon (EC, DG JRC, Italy) – KEYNOTE lecture  
*Review and evaluation of national procedures for deriving soil screening values in the European Union. One step closer to harmonisation*
- Provoost, Touchant, Bronders (VITO, Belgium)  
*Differences between soil screening values for volatile organic contaminants*
- Walthaus (VROM, NL), Wezenbeek (Grontmij, NL)  
*New soil quality standards in Dutch legislation for sustainable use of lightly contaminated soils – a decentralised approach.*
- D'Aprile (APAT, Italy), Berardi (ISPESL, Italy), Baciocchi (Università di Tor Vergata, Italy)  
*Development of site-specific target levels for contaminated sites: Italian guidelines*

**LeS A.5            Science / policy interface**

*Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Sagitarius*

*Chairman: H. Kasamas*

- Rügner, Bittens (Helmholtz Centre for Environmental Research – UFZ, Germany)  
*TASK – The Terra-, Aqua- & Site Remediation Competence Centre and Network*
- Scazzola, Ruggeri, Verdelocco, Battaglia (ENSR, Italia srl, Italy)  
*Risk assessment and site redevelopment: new opportunities to manage large portfolios of MGP sites in Italy*
- Wintersen, Posthuma (RIVM, NL)  
*The risk toolbox – an instrument to support site-specific management of soil quality and soil use*
- Orejudo, Mora, Carnicero (Agència Catalana de l' Aigua, Spain), Martí, López, De Pablo, Rovira (Ctm, Spain)  
*Development of risk-based contaminant reference concentration based on protection of human health for the sustainable use of groundwater*

**LeS A.6            Social / economic aspects**

*Friday, 6 June, 11.00 – 12.30 hrs, Hall Aquarius*

*Chairman: F. Quercia*

- Hazebrouck (INERIS, France), Baumont (IRSN, France), Legout (Cire InVS, France), Marot (ADEME, France)  
*A guide and a toolbox for public involvement in the assessment and the management of contaminated sites*
- Franken, van den Berg (Netherlands Environment Assessment Agency, NL), van Wezel (KIWA water research, NL), de Cleen (VROM, NL), Versluijs (Institute of Public Health and the Environment, NL)  
*Societal cost-benefit analysis of the soil remediation operation in The Netherlands*
- Beaulieu (Environment and Parks Ministry, Canada)  
*The Quebec CLIMATSOL program*
- De Naeyer, Van Dyck (OVAM, Belgium), Janssens, Dulière (BIM, Belgium), Fondaire, Dusart (DGRNE, Belgium)  
*The soil remediation fund for petrol stations in Belgium*

## Theme B: Functions & values; understanding of processes

### LeS B.1 Climate change: adaptation and research

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Scorpio

Chairman: J. van Wensem

- Olie, van Gaans-Godfroy, Nieuwenhuis, Rijnaarts (Deltares Soil & Water Systems, NL)  
*The TOEMAACK principle as mitigation of climate change from green house gasses in peat meadow districts* – **KEYNOTE lecture**
- Jeannée (Géovariations, France), Carré, Casalegno (European Commission, Italy), Bastrup-Birk (University of Copenhagen, Denmark)  
*Modelling the local spatial variability of the forest soil mineralization process over Europe*
- Bethge, Mohrlök (University of Karlsruhe, Germany)  
*Risk assessment for contaminant leaching from flood water retention areas*

### LeS B.2 Land use and consequences for (ground)water

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Taurus

Chairman: J. van Wensem

- Bonten, Groenenberg, Römkens, Brus (Alterra, NL)  
*Contribution of heavy metal leaching from agricultural soils to surface water loads*
- Mohrlök, Bethge (University of Karlsruhe, Germany)  
*Integrating urban soils and unsaturated zones into water and solute flux balances within the urban water cycle*

### LeS B.3 Beneficial microbial functions

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Libra

Chairman: B. Bone

- Ceja-Navarro, Rivera, Patiño-Zúñiga, Marsch, Dendooven (Cinvestav, Mexico), Govaerts (International Maize and Wheat Improvement Center (CIMMYT), Mexico)  
*PCR-DGGE and phylogenetic approach to analyze the effect of agricultural practices on soil bacterial communities*
- Rossetti, Tandoi (Water Research Institute, Italy) Aulenta, Majone (University "La Sapienza", Italy), Beretta (University of Milan, Italy)  
*In situ molecular tracking of dehalogenating bacteria: from microbial enrichments to field samples*
- Volpe, Del Moro, Rossetti, Tandoi (IRSA CNR, Italy)  
*High MTBE removal from a microbial consortium enriched at an Italian national interest site*
- Càliz, Montserrat, Vial (University of Girona, Spain) Sierra, Marti, Sánchez, Cruanas, Garau (University of Barcelona, Spain)  
*Chromium-resistant bacteria and TCP/PCP-resistant bacteria from a calcareous clayey soil: detection, identification, isolation and characterization of their behaviour at high pollutant concentrations*

## Theme C: Site investigation: Monitoring & Screening

### LeS C.1      Sensors-1

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Aquarius

Chairman: J. Müller

- Neuhaus (FUGRO CONSULT GmbH, Germany), Grossmann, Laudel, Tischer, Müller (GICON GmbH, Germany) – **KEYNOTE lecture**  
*Dynamic assessment of contaminated sites using in-situ investigation techniques and conceptual 3D site models*
- Conroy, (Interstate Technology Regulatory Council, USA)  
*Sensors: A new way to collect data for Environmental Decision-Making*
- Bakker, Bouwknecht (Tauw, NL), Dijkstra (NEN-Environment, NL), van Ree (Geodelft, NL)  
*Normalization approach field screening technologies*
- Van Keer, Bronders, Touchant, Wilczek (VITO, Belgium)  
*Application of the Membrane Interphase Probe: an evaluation*

### LeS C.2      Sensors-2

Friday, 6 June, 14.00 – 15.30 hrs, Hall Aquarius

Chairman: N. Dueso

- Morris, Boulton (University of Manchester, UK), Todman (Urban Vision Partnership Ltd., UK)  
*Improved ground-gas risk prediction using in-borehole gas monitoring*
- Martins Baessa, Ururahy Soriano (PETROBRAS/CENPES, Brazil), Oliva, Kiang (UNESP/Rio Claro, Brazil)  
*Conductive geophysical anomalies associated with petroleum hydrocarbon biodegradation process in a non-saturated zone*
- Raspa (University of Rome “La Sapienza”, Italy), Marella (APAT, Italy), Zanatta (Consultant, Rome, Italy)  
*An iterative sampling strategy for the identification of remediation volumes in contaminated sites*

### LeS C.3      Concepts-1

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Libra

Chairman : A. Dahmke

- Benoit (IFP, France), de Fouquet (ENSMP, France), Fricaudet, Carpentier (ARCADIS, France), Gourry (BRGM, France), Haudidier (VINCI TECHNOLOGIES, France), Lefebvre (ENSMP, France)  
*Cross linked methodologies to assess the contamination extension of hydrocarbon polluted soil*
- Boon, Ramsey (University of Sussex, UK), McKenna (Corus UK, UK), Yeo (Cybersense Biosystems, UK)  
*The use of measurement uncertainty to assess the reliability of on-site field test kits for the investigation of contaminated land*
- Norrman, Engelke (Swedish Geotechnical Institute (SGI), Sweden), Purucker (US EPA, USA), Stewart (University of Tennessee, USA), Back (Geolnnova, Sweden)  
*Framework for optimizing the evaluation of data from contaminated soil in Sweden*
- Rein, Dietrich (Helmholtz Centre for Environmental Research – UFZ, Germany), Bauer (Christian-Albrechts-University of Kiel, Germany)  
*Temporal variability of groundwater flow conditions – Influence on point measurements and mass flux estimations*

### LeS C.4      Concepts-2

Friday, 6 June, 14.00 – 15.30 hrs, Hall Libra

Chairman: E. Robold

- Rein, Bittens, Popp, Dietrich (Helmholtz Centre for Environmental Research – UFZ, Germany), Holm, Rotard (Technical University of Berlin, Germany) – **KEYNOTE lecture**  
*Revitalisation of rural megasites – Adaptive strategies and technologies for risk-based site characterisation and monitoring*
- Thomas, Ramsey, John (University of Sussex and B. Barnes, Environment Agency, UK)  
*Case study using a new experimental design for the quantification of contaminant heterogeneity in soils*
- Martens, Walraevens (Ghent University, Belgium)  
*Geo-electrical tomography and electromagnetical profiling as an effective scanning tool for detecting, defining groundwater contamination and monitoring contaminant remediation*
- MacLeod, Ross, Harvey (Arcadis Geraghty & Miller International Ltd, UK), Burdick (Arcadis NV), Maggs (Akzo Nobel)  
*Verification of In-situ Soil Remediation: Multiple Lines of Evidence*

**LeS C.5      Analytcs-1**

*Wednesday, 4 June, 11.00 – 12.30 hrs, Hall Scorpio*

*Chairman: M. Beaulieu*

- Keijzer, Schuren (Tauw, NL), Hiller (Schlumberger Oil Field Services, USA)  
*Soil heterogeneity and natural oxygen demand (NOD) towards permanganate: A Dutch case study*
- Mao, Diels (VITO, University of Antwerpen, Belgium), Van De Weghe, Lookman, De Brucker, Vanermen (VITO, Belgium)  
*Novel detailed group-type characterization method for petroleum hydrocarbons and its application for assessing remediation potential of oil contaminated soils*
- Russold (ARCADIS Consult GmbH, Germany)  
*Tracer test studies supporting the development of conceptual site models and remediation designs in fractured bedrock*
- Aravena, Shouakar-Stash (University Of Waterloo, Canada), Hunkeler (University of Neuchatel, Switzerland), Bjorklund (Erm, Environmental Resources Management, Usa)  
*Application of compound-specific carbon and chlorine stable isotope for fingerprinting sources of chlorinated compounds in groundwater*

## Theme D: Risks & impacts

### LeS D.1 Human exposure & assessment -1

Friday, 6 June, 11.00 – 12.30 hrs, Hall Sagitarius

Chairman: J. Frauenstein

- Macklin, Earl (Atkins Limited, UK) – **KEYNOTE lecture**  
*Development of chronic human health soil assessment criteria for risks to trespassers*
- Lijzen, Baars, Bakker, Brand, Oomen, Otte, Swartjes (National Institute for Public Health and the Environment (RIVM), NL)  
*Site specific human risk assessment of soil contamination; how it was improved and can be applied*
- Römken (Alterra, NL), Franz, van der Fels-Klerx (RIKILT, NL)  
*Exposure modeling as a tool to assess risks of cadmium in soil*
- Errasti-Orozco (Labein Tecnalia, Spain), Sheetharam, Thomas (Cardiff University, UK)  
*Integrated health impact analysis of a population affected by arsenic contamination in drinking water in Northern México*

### LeS D.2 Human exposure & assessment -2

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Sagitarius

Chairman: J. Müller

- Oorts, Van Sprang (EURAS European Center for Risk Assessment, Belgium), Smolders (University of Leuven, Belgium), Schoeters (ECI European Copper Institute, Belgium)  
*A site specific ecological risk assessment for metals in soils*
- Provoost, Touchant, Bronders (VITO, Belgium), Bosman (Hogeschool West-Vlaanderen, Belgium)  
*Accuracy of five vapour intrusion models for VOC in the soil or groundwater*
- Grøn, Oberender (DHI Water • Environment • Health), Simonsen (Eurofins Inc), Andersen (COWI), Rokkjær (Danish Environmental Protection Agency)  
*Fraction based risk assessment of petroleum hydrocarbon contaminated soils*
- Magee, Anderson, Haines, Longoni (AMEC Earth & Environmental, USA)  
*Drinking water remedial goals for two pharmaceuticals in groundwater*

### LeS D.3 Ecological risk assessment

Wednesday, 4 June, 11.00 – 12.30 hrs, Hall Sagitarius

Chairman: J. Müller

- Rein, Bittens (Helmholtz Centre for Environmental Research – UFZ, Germany)  
*Multimedia environmental modelling for a risk-based implementation of biological in situ methods*
- Wagelmans (Bioclear Groningen, NL), Grotenhuis, (Wageningen University, NL)  
*Pollutants in soils: What are actual risks and perspectives?*
- Trett (Physalia Limited, UK/Spain), Thurgood (Environmental and Remediation Services Limited, UK)  
*Assessment and monitoring of actual ecological effects; nematodes in the service of industry and regulators*
- Maughan, Loveridge, Miori (CH2M HILL, Italy)  
*Ecological Risk Assessment of chlorinated pesticides in an urban river*

### LeS D.4 Fate & transport-1

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Libra

Chairman: V. Dries

- Comans (Energy Research Centre of The Netherlands (ECN), & Wageningen University, NL), Dijkstra, van der Sloot, Meeussen, Zomeren (ECN, NL) – **KEYNOTE lecture**  
*A consistent geochemical modelling approach for the long-term assessment of release from contaminated materials to soil and groundwater*
- Elert (Kemakta Konsult AB, Sweden), Kleja, Jarvis (Swedish University of Agricultural Sciences, Sweden), Eliaeson (IVL Swedish Environmental Research Institute Ltd, Sweden), Gustafsson (The Royal Institute of Technology, Sweden), Wadstein, Enell (Swedish Geotechnical Institute (SGI), Sweden)  
*Releases from contaminated sites – methods to assess leaching and transport*
- Orsi, Pollard, Coulon (Cranfield University, UK), Turner, Walton (Volatiles Research Group, UK), Daly (National Grid Property, UK)  
*Evaluation of vapour emissions aiming former gasholder decommissioning*
- Enell, Andersson-Sköld, Hemström, Toomväli (Swedish Geotechnical Institute (SGI), Sweden)  
*Creosote impregnated sleepers – an acceptable risk?*

### LeS D.5 Fate & transport-2

Thursday, 5 June, 11.00 – 12.30 hrs, Hall Sagitarius

Chairman: A. Dahmke

- Werner, Hüßers, Lorbeer, Schönekerl (TU Dresden, Germany), Leibenath (UBV Umweltbüro GmbH Vogtland, Germany)  
*Dynamic behaviour and natural attenuation potential of PAHs, BTEX in a tar oil contaminated site*
- Grøn, J.B. Hansen (DHI Water • Environment • Health), N. Hansen (Eurofins Inc), Andersen (COWI), Rokkjær (Danish Environmental Protection Agency)  
*Occurrence and risk assessment of NSO compounds in soils contaminated with petroleum products*

ConSoil 2008, Lecture Sessions

- Held (ARCADIS Consult, Germany), Blotvogel (Colorado State University, USA)  
*Heterocyclic aromatic compounds – assessment of substance properties and occurrence*
- Tiehm, Sagner (Water Technology Center (TZW), Germany)  
*NSO-heterocyclic aromatic compounds (NSO-HET): Ecotoxicity and biodegradability*

**LeS D.6 Decision making & risk assessment**

Friday, 6 June, 09.00 – 10.30 hrs, Hall Libra

Chairman: E. Robold

- Ramsey (University of Sussex, UK)  
*Uncertainty estimation to enable better site investigation and risk assessment*
- Sagnelli, La Licata (Envi-Mod, Environment Park S.p.A., Italy), Ruggeri (Envi-Mod, Environment Park S.p.A., Torino & Politecnico di Torino, Italy)  
*Scoring procedure and uncertainty propagation in scenario selection*
- Birkel, Ningelgen (Headquarters United States Air Forces in Europe, Germany), Stapleton (Bhate Associates, Inc., USA), Salhotra (Risk Assessment & Management Group, Inc., USA), Schmidt (Moron Air Base, Spain)  
*Development of a Risk Assessment Decision Support System for the risk assessment of suspected contaminated sites at U.S. Air Force installations in Europe*
- Masi, Arlotti, Alberti (Foster Wheeler Italiana SpA, Italy)  
*On some numerical implications of the additive principle in Cumulative Risk Assessment*

**LeS D.7 Bioavailability & bioaccessibility**

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Scorpio

Chairman: S. Boekhold

- Morgan, Macklin, Earl, Walker (Atkins Limited, UK)  
*Chronic human health site specific assessment criteria development based on a detailed receptor behaviour survey at an allotment site, considering potential bioaccessibility*
- Caboche (INERIS & URAFPA, France), Denys, Tack (INERIS, France), Feidt (URAFPA, France)  
*Bioaccessibility and speciation of As and Pb in soils contaminated by two distinct anthropic activities*
- Brand, Peijnenburg, Lijzen (RIVM, NL)  
*Bioavailability in risk evaluation of soils. Suggestions for implementation*
- Biasioli, Ajmone Marsan (University of Torino, Italy), Lepora, Pogliano, Rampi (Golder Associates, Italy)  
*Estimation of natural background concentration of Co, Cr and Ni in a contaminated site in Piemonte, Italy*

**LeS D.8 Quality insurance in risk assessment**

Friday, 6 June, 11.00 – 12.30 hrs, Hall Martini

Chairman: P. Nathanail

- Dries, Ceenaeme, Dedeker, De Naeyer, Gommeren, Van Dyck (OVAM, Belgium)  
*Quality management makes or breaks contaminated land management policy*
- de Groof (SIKB, NL), Ruwiel (Ministry of VROM, NL)  
*No more rubbish in cleaning up the soil*
- Carpels (ECO2 bvba, Belgium), De Naeyer, Ceulemans, Bogaert (OVAM, Belgium), Ide, Sweevers (OVB vzw, Belgium)  
*Environment, health and safety in soil remediation: Achilles quality system*
- Lud (Tauw GmbH, Germany), Bal (Tauw bv, NL)  
*Making use of site-specific measurements*

## Theme E: Remediation: Concepts & Technologies

### LeS E.1 In-situ chemical oxidation-1

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Taurus

Chairman: P. Bardos

- Plaisier (In-Situ Technieken, NL) – **KEYNOTE lecture**  
*BISCO, the benefits of a biological rebound and natural degradation after a treatment with chemical oxidation, results of tests and field*
- Trötschler, Koschitzky, Limburg (VEGAS, University of Stuttgart, Germany), Saner, Tiehm (TZW, Germany)  
*ENA of heterocyclic hydrocarbons using hydrogen peroxide and groundwater circulation wells – pilot application in the plume of a former gasworks*
- Uyttebroek, Baillieul, Ross, De Moor, Van Geert, Gevaerts, Burdick (ARCADIS Belgium, Belgium), Vossen (In-Situ Technieken, NL)  
*In-situ persulfate oxidation for a soil contamination of chlorinated ethenes*
- Ciotti, Baciocchi (University of Rome “Tor Vergata”, Italy), Cleriti, Chiavola (University of Roma “Sapienza”, Italy)  
*Peroxy-acid as an innovative oxidant for the remediation of contaminated sediments*

### LeS E.2 In-situ chemical oxidation-2

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Libra

Chairman : H. Vermeulen

- Carvel (MECX LLC, USA), Piepoli (ASTC, Italy)  
*Multicomponent oxidizers for in situ remediation*
- Hartog, van der meulen (TNO, NL), Parjker (University of Guelph, Canada), Cavé, Al (University of New Brunswick, Canada)  
*Optimizing in-situ chemical oxidation of residual DNAPL: geochemical controls and sediment oxidant demand*
- Baciocchi, Ciotti (Università di Roma Tor Vergata, Italy), Capotorti, Innocenti, Nardella (ENI R&M, Italy)  
*Pilot scale in situ chemical oxidation treatment of a former refinery site*
- Lee, Lamble, Sarr (WSP Group, UK)  
*The bench scale and pilot testing of chlorinated hydrocarbons in delivering cost effective remediation by chemical oxidation: a case study in Switzerland*

### LeS E.3 Nano-scale iron

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Taurus

Chairman : W. Gevaerts

- Sethi, Tiraferri, Di Molfetta (DITAG – Politecnico di Torino, Italy)  
*Nanoscale iron characterization and mobility enhancement by means of biogretable hydrocolloids*
- Braun, De Boer, Klaas (University of Stuttgart, VEGAS, Germany)  
*Nano-iron for in-situ groundwater and soil remediation: experimental results on transport distances during injection*
- Bendz, Carlsson, Enell, Suér (Swedish Geotechnical Institute (SGI), Sweden)  
*Nano scale zero valent iron for remediation of soil contaminated with arsenic and chromium: 1. Governing processes in a column scale experimental setup*
- Zhang (Lehigh University, USA), Gill (PARS Environmental, Inc., USA), Ayyaswami, (TerraSure, USA)  
*Transformation of persistent organic pollutants (POPs) with nano scale bimetallic particles*

### LeS E.4 Thermal techniques – 1

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Sagittarius

Chairman: W. Gevaerts

- Koschitzky, Trötschler, Limburg (University of Stuttgart, VEGAS, Germany), Hirsch, Weiß (Helmholtz Centre for Environmental Research – UFZ, Germany) – **KEYNOTE lecture**  
*Steam-air-injection for in-situ groundwater and soil remediation: Pilot application at the former industrial site in Zeitz, Germany*
- Betti, Colombo, Trezzi (ENVIRON ITALY S.r.l., Italy), Mozzi, Gattazzo (Syndial S.p.A, Italy)  
*Assessing the effectiveness of the steam injection system in accelerating soil/water remediation: a case study*
- Heron, Baker, LaChance, Bierschenk (TerraTherm, Inc., USA), Ploug, Faurbye (Krüger A/S, Denmark), Langford, Tully (AIG Engineering Group Ltd., UK)  
*Thermal conduction heating for DNAPL removal in low-permeability soils and bedrock*
- Taddeo, Flatley, Groher, Schwendeman (ENSR, USA), Susanni (ENSR, Italy)  
*Applications of electrical resistance heating to a DNAPL-impacted site*

### LeS E.5 Thermal techniques – 2

Friday, 6 June, 14.00 – 15.30 hrs, Hall Taurus

Chairman: V. Dries

- Baker, Heron, Tarmasiewicz, Bierschenk (TerraTherm, Inc., USA)  
*Completion of in-situ thermal remediation of PAHs, PCP and dioxins at a former wood treatment facility*

- Jourdain, Saadaoui, Falcinelli, Haemers (Deep Green SA, Belgium)  
*In-situ thermal treatment in urban polluted areas: application of Thermopile©*
- Dusilek, Kvapil (AQUATEST a.s., Czech Republic), Udell (University of California, USA)  
*In situ thermal technology application – results of post-remedial monitoring*
- Hiester, Schrenk (reconsite – TTI GmbH, Germany)  
*Thermally enhanced in-situ remediations beneath buildings during their continued usage – new source removal options for urban sites*

### **LeS E.6 Natural attenuation**

Wednesday, 4 June, 11.00 – 12.30 hrs, Hall Libra

Chairman: B. Bone

- Held (ARCADIS Consult, Germany) – **KEYNOTE lecture**  
*Hydrogeological effects on natural attenuation of CVOC's*
- Leyval, Beguiristain, Biache, Cébron, Faure, Masfarau, Norini, Ouvrard, Vasseur (LIMOS CNRS Nancy University, France)  
*Natural attenuation on a field site contaminated with PAH and heavy metals: fate of pollutants and their toxicity, plant growth and microbial functional diversity*
- Werner, Leibenath, Börke, Hüßers, Lorbeer, Schönekerl (TU Dresden)  
*Implementation of Natural Attenuation on a wood preservation facility contaminated with tar oil*
- Volkering (Tauf bv, NL), van Breukelen (VU University Amsterdam, NL), Gemoets (VITO, Belgium), Sakaguchi-Söder (Darmstadt University of Technology, Germany), Veld, TNO, NL), Elsner (Helmholtz Centre for Environment and Health, Germany)  
*SNOWMAN project 'Extending the Natural Attenuation of Chlorinated solvents Toolbox' (ENACT)*

### **LeS E.7 Enhanced natural attenuation-1**

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Aquarius

Chairman : B. Engeser

- Leccese, Viotti, Petrangeli Papini, Aulenta, Bozzano, Petitta (SAPIENZA University of Rome, Italy) -  
*Modelling the effects of lactate injection to promote in situ anaerobic bioremediation of a CAHs contaminated aquifer – KEYNOTE lecture*
- Schmidt, Tiehm (Water Technology Center, Germany), Heidinger Ertl (Hydroisotop GmbH, Germany)  
*Natural attenuation of chloroethenes – site assessment by microcosm studies, 16S-PCR and 13C-isotope fractionation*
- Meskens, Heylen, Bouckenooghe (Soresma NV, Belgium)  
*Different methods to stimulate the biological degradation of 1,1,1-Trichloroethane*
- Borden (Solutions-IES & North Carolina State University, USA)  
*Anaerobic bioremediation with Emulsified Oil Substrate (EOS®)*

### **LeS E.8 Enhanced natural attenuation-2**

Friday, 6 June, 09.00 – 10.30 hrs, Hall Gemini

Chairman: F. Swartjes

- Brown (ERM, Inc., USA), Thomas (ERM, Inc., UK), Dijkshoorn (ERM, Belgium), presented by Paulo Valle (ERM, Belgium)  
*Developments in In Situ Chemical Reduction (ISCR) technology*
- Niqui-Arroyo, Velasco-Casal, Ortega-Calvo (CSIC, Spain)  
*Bioremediation of hydrophobic organic chemicals in soils: prospecting new biological and physicochemical approaches to improve bioavailability*
- Bastiaens, Simons, Boënné, Debor Gemoets (VITO, Belgium)  
*Bioaugmentation to remediate Methyl tert-Butyl Ether (MTBE) Contaminated groundwaters: from lab to pilot scale*
- Pukkila, Kontro (University of Helsinki, Finland), Gustafsson (Finnish Environment Institute, Finland)  
*Dichlobenil and BAM degrading microbes isolated from subsurface deposits and soil surface in Finland*

### **LeS E.9 Non-conventional concepts**

Friday, 6 June, 09.00 – 10.30 hrs, Hall Martini

Chairman : P. Nathanail

- Glöckner, Giese (DGFZ, Germany)  
*Treatment of contaminated groundwater with chlorinated hydrocarbons (CHC) by using new anoxic vacuum stripping technologies*
- Pijls, Volkering, Weelink (Tauf bv, NL) (presented by Volkering)  
*Feasibility of chemical reduction and oxidation of HCH (Hexachlorocyclohexane)*
- D' Emilio (Snamprogetti, S.P.A., Italy) Salamone (SYNDIAL S.p.A., Italy)  
*First applications of ISCO and in situ ECRT in Italy*
- Zanganelli, Accettulli, Longoni (SAPIO Produzione Idrogeno e Ossigeno, MONZA MI, Italy)  
*Innovative "IN SITU" remediation technology of Groundwater and soil contaminated with Chromium VI*

### **LeS E.10 Decision support tools**

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Sagitarius

Chairman : P. Bardos

- van der Meulen, van Duijne, Hartog, Maring, Rijnaarts (TNO, NL) – **KEYNOTE lecture**  
*Holland in-situ program: demonstration and optimization of in-situ remediation through a technical and process oriented R&D program*
- Koenigsberg, Simon, Burns, Sarr, Haitz (WSP Environmental Strategies, USA)  
*Advanced diagnostic tools and applications to site design, management and accelerated closure*
- Gruiz, Molnár (Budapest University of Technology and Economics, Hungary), Fenyvesi (<sup>2</sup>Cyclolab Cyclodextrin R&D Laboratory Ltd., Hungary)  
*Verification tool for in situ soil remediation technologies*
- Pandeale, Finkel, Ellul, Özdemir, Bayer (University of Tübingen, Germany)  
*Accounting for Time-Variant Boundary Conditions in the Assessment and Development of Remediation Strategies*

### **LeS E.11 Modelling**

Thursday, 6 June, 11.00 – 12.30 hrs, Hall Martini

Chairman: H. Weiss

- Weber, Tränckner, Uhlig, Luckner (GFI GmbH, Germany), Vogt (LMBV mbH, Germany)  
*Implementation of sequences and mass balances for electron acceptors on reactive transport modelling for prediction of natural attenuation*
- D’Affonseca, Finkel, Park, Blum (University of Tübingen, Germany)  
*Evaluating performance of NAPL source remediation technologies*
- Baker, Heron, LaChance (TerraTherm, Inc., USA), Färber, Li Yang, Hiester (University of Stuttgart, Germany)  
*2-D physical models of thermal conduction heating for remediation of DNAPL source zones in aquitards*
- Saponaro, Puricelli, Sezenna, Bonomo (Politecnico di Milano DIIAR, Italy)  
*A modeling approach supporting Air Sparging system design*

### **LeS E.12 Heavy metals**

Tuesday 3 June, 16.00 – 17.30 hrs, Hall Libra

Chairman: L. Diels

- Vanbroekhoven, Van Roy, Diels, Gemoets (VITO, Belgium), Verkaeren (MWH, Belgium), Zeuwts (Smet GWT, Belgium), van den Broeck, Koen (Umicore, Belgium) – **KEYNOTE lecture**  
*Inducing sulfate reducing bacteria in the saturated zone near a non-ferrous industry*
- Guido, Carrera, (Snamprogetti S.p.A – Eni Corporale, Italy), Gattazzo (Syndial S.p.A, Italy)  
*Remediation of mercury contaminated sediments by sulphur stabilization*
- Bernal, Clemente, de la Fuente, Martínez-Alcalá (CEBAS-CSIC, Spain), Walter (IMIDA, Spain)  
*Phytoremediation of metal-contaminated soils: constraints and limitations in the case of the Aznalcóllar pyrite spill*

### **LeS E.13 Barriers**

Thursday 5 June, 11.00 – 12.30, Hall Gemini

Chairman: V. Tandoi

- Wimmerova, Stehlickova (DEKONTA, Czech Republic), Svab, Mullerova (ICT, CR), Kozler (VUAnCh, Czech Republic)  
*Innovative materials for permeable reactive barriers – sorption and biofiltration of organic and inorganic pollutants*
- Boni, Sbaffoni (SAPIENZA, University of Rome, Italy)  
*Organic permeable barriers for Cr(VI) removal from contaminated groundwater – lab-scale experiences*
- Van Nooten, Diels, Bastiaens (VITO, Mol, Belgium)  
*Design of a lab-scale multifunctional permeable reactive barrier for remediation of landfill leachate*
- Uhlig, Kassahun, Luckner (GFI, Germany), Zschiedrich (LMBV, Germany)  
*Pilot test with an active drain & gate system as a part of a multi step reactive barrier*

### **LeS E.14 Source zone treatment**

Wednesday, 4 June, 09.00 – 10.30 hrs, Hall Franci

Chairman: L. Diels

- Switzer, Pironi, Rein, Fuentes, Torero (University of Edinburgh, UK), Gerhard (University of Western Ontario, Canada) – **KEYNOTE lecture**  
*Experimental studies of self-sustaining thermal for Aquifer Remediation (STAR) for Non-Aqueous Phase Liquid (NAPL) sources*
- Hiester, Müller, Trötschler, Koschitzky (University of Stuttgart, VEGAS, Germany), Baker, LaChance, Heron (TerraTherm, USA), Kuhlman (MK Tech Solutions Inc., USA)  
*Dominating processes during DNAPL removal from the saturated zone using thermal wells*
- Bastiaens, Boëne, De Ceuster, Gemoets (VITO, Belgium), Verreydt, Vanderauwera (Hogeschool Antwerpen, Belgium)  
*Treatment of DNAPLs by (bio)surfactant flushing: from lab scale testing to pilot test*

- Leccese, Viotti, Petrangeli Papini, Luciano (SAPIENZA University of Rome, Italy), Luciano (University of Rome TOR VERGATA, Italy)  
*A lab experience to investigate 2D DNAPL migration in porous media by means of image analysis*

### **LeS E.15 Electrical techniques**

Tuesday, 3 June, 16.00 – 17.30 hrs, hall Aquarius

Chairman; J. Vegter

- Canosa, Reale, Panero, Majone, Aulenta (SAPIENZA University of Rome, Italy), Rossetti (National Research Council (IRSA-CNR)) – **KEYNOTE lecture**  
*Bioelectrochemically-assisted reductive dechlorination: an innovative approach for remediating chlorinated solvent contaminated groundwater*
- Andreottola, Ferrarese (University of Trento, Italy)  
*Remediation of polycyclic aromatic hydrocarbons and organolead compounds by electrochemical oxidation*
- Guiot, Tartakovsky, Cimpioa, Manuel, Barret, Husser (Nat. Res. Council Canada, Canada); presenter: Ruxandra Cimpioa  
*The Electrolytic Methanogenic-Methanotrophic Coupling (eMaMoC) concept for groundwater bioremediation: validation at pilot-scale on mixed contamination*
- Kelley, Mork (Regenesis, California, USA), Crowley (Regenesis, Ireland), Birnstingl (Regenesis, UK)  
*The impact of electron donor zeta potential and hydrophile / lipophile balance on subsurface distribution*

### **LeS E.16 Special subjects-1**

Wednesday, 4 June, 11.00 – 12.30 hrs, hall Taurus

Chairman: H. Weiss

- Hamonts, Maesen, Ryngaert, Vos, Bronders, Dejonghe\* (VITO, Belgium), Dijk, Springael (Catholic University of Leuven, Belgium), Sturme, Smidt (Wageningen University, NL), Kuklik, Kozubek (AQUATEST, CR), Kuhn, Meckenstock (Forschungszentrum für Umwelt und Gesundheit, Germany), Kalka, Peters (Umwelt- und Ingenieurtechnik, Germany)  
*Sediment biobarriers for chlorinated aliphatic hydrocarbons in groundwater reaching surface water*
- Bambara, Bondanelli, Da Pozzo, De Propris, Scarcella, (ICRAM (Central Institute for Marine Research), Ministry of Environment, Italy)  
*The environmental remediation as an opportunity of economic development within sites of national interest*
- Connolly, Street, Rahman, Lord (University of Teesside, UK)  
*Reduction of oily hazardous wastes via biosurfactant washing*
- Pensaert, De Puydt, Janssens (DEC NV, DEME Environmental Contractors, Belgium), Vanpée (Total Belgium, Belgium), Vander Velpen, De Cock, Goorden (Haskoning Belgium, Belgium)  
*The remediation of the acid tar lagoons at Rieme, Belgium*

### **LeS E.17 Special subjects-2**

Friday, 6 June, 11.00 – 12.30 hrs, Hall Taurus

Chairman: M. Petrangeli-Papini

- Sagi-Ben Moshe (The Hebrew University of Jerusalem, Israel), Ronen, Dahan, Weisbrod (Ben Gurion University of the Negev, Israel), Nativ ((The Hebrew University of Jerusalem, Israel)  
*Biodegradation of explosives mixture in soil*
- Hennecke, Kördel (Fraunhofer IME, Germany), Steinbach, Hermann (Philipps-Universität Marburg, Germany)  
*Transformation processes of explosives in natural water / sediment systems*
- Kördel, Hennecke, Hörner (Fraunhofer IME, Germany) (presented by Hennecke)  
*Effectivity of Natural Attenuation in contaminated munitions sites*
- Ross, MacLeod, Harvey (Arcadis Geraghty and Miller International Ltd, UK), Burdick (ARCADIS NV), Maggs (Akzo Nobel)  
*In-situ remediation of carbon disulphide*

## Theme F: Sustainable & Risk Based Land Management

### LeS F.1 Instruments Sustainable Land Management

Tuesday, 3 June, 16.00 – 17.30 hrs, Hall Gemini

Chairman: J. van Veen

- Van Breemen, Lijzen, Otte, van Vlaardingen, Spijker, Verbruggen, Swartjes, Rutgers, Groenenberg (National Institute for Public Health and the Environment RIVM, NL)  
*Deriving land use specific reference values for setting maximal values for soil in Dutch soil policy*
- Zhang, Finkel, Bayer (University of Tübingen, Germany)  
*Evaluating real options in remediation investment projects*
- Preuss (German Institute of Urban Affairs (Difu))  
*Circular land use management in city regions: strategy and instruments*
- Versluijs, van Wijnen, van den Broek (RIVM, NL), de Cleen (VROM, NL), Mulder (Buro3B)  
*The national potentially polluted sites database as input for a societal cost benefit analysis of the soil remediation operation in The Netherlands*

### LeS F.2 Brownfields

Tuesday, 3 June, 11.00 – 12.30 hrs, Hall Franci

Chairman: J. Vegter

- Ertel, Schug (Sachverständigen-Büro Dr. Ertel, Germany), Geffers (Landeshauptstadt Stuttgart, Germany) – **KEYNOTE lecture**  
*REVIT – revitalising industrial sites. Towards more effective and sustainable brownfield revitalisation policies*
- Bronders, Touchant, Van Keer, Patyn, Provoost (VITO, Belgium)  
*A risk management plan for the redevelopment of a brown field: an example*
- Braun, Samtleben (University of Stuttgart, VEGAS, Germany), Schrenk (reconsite – TTI GmbH, Germany)  
*SMC Develop SMS – small and medium-sized companies (SMC) develop small and medium-sized sites – a REFINA project located in the city of Stuttgart*
- Bulman, Marsh, Leus, Kinch  
*The development of multi-media risk-based standards for use in Ontario's Brownfields Regulation*

### LeS F.3 (Ground)water

Thursday, 5 June, 09.00 – 10.30 hrs, Hall Martini

Chairman: M. Majone

- Dols, Slenders (ARCADIS, NL), de Vries, Seeters (Gemeente Utrecht, NL)  
*A Groundwater management zone in the inner city of Utrecht, a means of dealing with multiple plumes and dynamic use of the subsurface*
- Slenders, Verburg (ARCADIS, NL), Schreurs, Melgert (Philips Environmen and Safety, NL), van Dieren, Scholten (Park Strijp Beheer, NL)  
*Combining heat-cold storage and groundwater contaminant management during the redevelopment of a former industrial complex*
- Guzzella, Salerno (CNR-IRSA, Italy), Di Palma, Arduini, Zelioli (Provincia di Milano, Italy)  
*QUALFALDA Project: quali/quantitative state of aquifers in the Milan Province*
- Zanovello (Studio Altieri, Italy), Albano, Frank (CH2M HILL, Italy), De Nat (Thetis, Italy)  
*Sustainable land and water reuse at the Venice Lagoon: the Fusina Integrated Project treatment wetland system*

### LeS F.4 New Approaches

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Libra

Chairman: M. Beccari

- Andersson-Sköld (SGI, Sweden), Bardos, (r3, UK), Blom (FB Engineering, Sweden), Keuning (Bioclear, NL), Track (Dechema, Germany)  
*Crop based systems – a no or low cost approach for sustainable risk based land management?*
- Boekhold (Soil Protection Technical CommitteeNL), Hanegraaf (Nutrient Management Institute NMI, NL)  
*Effects of the production of biomass for energy on soil quality in The Netherlands*
- McKnight, Finkel (University of Tuebingen, Germany)  
*Model-Based Preliminary Assessment: a new approach to improve tiered decision-making for contaminated land management*
- van Wensem (Soil Protection Technical Committee, NL), Faber (Alterra, NL)  
*An ecosystem approach as innovative concept for promoting sustainable land use*

**LeS F.5 Social Aspects**

Friday, 6 June, 09.00 – 10.30 hrs, Hall Aquarius

Chairman: J. Frauenstein

- Lee, Baldock, Lambie (WSP Remediation Ltd, UK) – **KEYNOTE lecture**  
*Remediation or problem translocation: an ethical discussion as to the sustainability of the remediation market and carbon calculating*
- De Sloovere, De Naeyer, Van Dyck (OVAM, Belgium), Buvé, Kegels (Umicore NV, Belgium)  
Presented by Maarten Vantorre (OVAM)  
*How can policy makers cope with a broad contaminated residential area? Remediation versus social acceptance – case in Flanders*
- Thurgood (Environmental and Remediation Services Limited, UK)  
*Contaminated land investigation & remediation – communicating with the public – a case study*
- Weingran (HIM GmbH, HIM-ASG, Germany)  
*Public participation in the remediation of contaminated sites – conception, principles, experience*

**LeS F.6 Environmental Aspects & Costs**

Friday, 6 June, 14.00 – 15.30 hrs, Hall Martini

Chairman: F. Swartjes

- Gussoni, De Salvia, Parolin, Piana (Building Municipality of Milan, Italy)  
*An integrated approach for the sustainable inner development of brownfields*
- Zaninetta (Syndial S.p.A., Italy), Colombo, Pozzi (ENVIRON Italy S.r.l., Italy)  
*Benchmark of remediation costs*
- Morio, Finkel (University of Tuebingen, Germany), Martac (tgag – Tübinger Gesellschaft für Angewandte Geowissenschaften e.V., Germany)  
*Enhancing brownfield revitalisation strategies by analysing future land use scenarios, contamination and clean-up costs: A holistic multi-method approach*
- Schrooten, Van Alphen (Soresma, Belgium)  
*GEMS: a GIS based tool for soil contamination cost calculations*

## Theme G: Complete cases

### LeS G.1 Former industrial and military sites

Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Gemini

Chairman: D. Darmendrail

- Stacul, Mariotti, Guardigli, Liberatore, Mosca (Sviluppo Italia Aree Produttive S.p.A., Italy)  
*Integrated remediation of an industrial settlement polluted by asbestos*
- Gommers, Feyaerts (Umicore, Belgium), Verkaeren, Muguet (MWH, Belgium), Zeuwts (Smet GWT, Belgium), Vanbroekhoven, Gemoets (VITO, Belgium)  
*In situ precipitation for remediation of Co, Ni, Zn and Cd contaminated groundwater*
- Frauenstein (UBA, Germany), Hingst, Heuschneider (IABG, Germany)  
*Establishment of an environmental management system in the Georgian armed forces – case study Dedoplistskaro Ammunition Disposal Plant (Georgia)*
- Piroth (ARCADIS Consult, Germany), Hartl, AJAG(E), representative of the Canadian Forces), Mangold (Landratsamt Ortenaukreis, Water Authority, Germany)  
*Project management and innovative concepts for the groundwater investigation and – remediation at the former NATO-Air Base Lahr, Germany*

### LeS G.2 Brownfields

Friday, 6 June, 11.00 – 12.30 hrs, Hall Libra

Chairman: N. Dueso

- Schrooten, Coopman (Soresma NV, Belgium), Ide, Leys (Envisan NV, Belgium), Kindt (OVAM, Belgium), Descamps, Lox (SPAQuE, Belgium)  
*Carcoke Company: 3 coking plants, 3 regions, 3 solutions*
- Maene (City of Ghent, Belgium)  
*Brownfield Gasmeterlaan Ghent*
- Noé (ARCADIS Consul, Germany)  
*Airfield Böblingen/ Sindelfingen – Transformation of a former military site into a new city quarter*
- Barbosa Dantas (TU Berlin, Germany), Nieters (GTZ – Rio, Brazil/Germany)  
*Redevelopment of brownfield in Rio de Janeiro: housing x public participation in Manguinhos*

### LeS G.3 Harbours / waterfronts

Wednesday, 4 June, 14.00 – 15.30 hrs, Hall Taurus

Chairman: D. Darmendrail

- Capretti, Maggiori, Bellini (Comune di Brescia, Italy) – **KEYNOTE lecture**  
*Brescia – Caffaro, site of national relevance: a case study of pollution by PCB, PCDD-PCDF, Arsen (As) and Mercury (Hg) in an urban area*
- Mariotti, Stacul, Di Nardo, Mosca (Sviluppo Italia Aree Produttive S.p.A., Italy)  
*Remediation of polluted sediments and economical development in the Agusta harbour, Priolo (SR)*
- Wevers (Boskalis Dolman bv, NL), Spelt (Cofra bv, NL)  
*Vacuum consolidation of fine grained materials (BeauDrain-S ®): creation of space in the harbour of Bremerhafen*
- Battle-Aguilar, Dassargues (University of Liège, Belgium), Brouyère (University of Liège, and Aquapôle-ULg, Belgium), Diels, Vanbroekhoven (VITO, Belgium), Hunkeler, Morasch (University of Neuchâtel, Switzerland), Halen (Public Society for the Environment Quality, SPAQuE, Belgium)  
*Hydrodynamic characterisation of a groundwater – surface water system and evaluation of BTEX, PAHs decay and heavy metals fate*

## Theme H: Coastal zones

### **LeS H.1 Coastal zones**

*Tuesday, 3 June, 14.00 – 15.30 hrs, Hall Scorpio*

*Chairman: S. Boekhold*

- van Beek, Lambert, Blauw, de Louw (Deltares, NL), Faassen (Hoogheemraadschap Rijnland, NL)  
*Application of BioSealing for salt water seepage reduction*
- Pozzi, Apollo, Colombo (Environ Italy Srl., Italy)  
*DNAPL mobility, physical processes and emergency response strategy in coastal aquifers*
- Montobbio, Bernstein (Consorzio Venezia Nuova), Volpe (Magistrato alle Acque di Venezia)  
*Environmental monitoring of the Venice Lagoon around Porto Marghera industrial harbour by Venice Water Authority*