



Topics AquaConSoil 2019

1. Soil and water in the digital world

The world is changing. Innovations emerge fast and change our possibilities. The use of drones, big data, the internet of things, block chain technology: how can these new technologies be useful applied for soil, sediment, water and land management? This theme focuses on these new developments, their opportunities and what their value can be in our field of work.

Topics under this theme are:

- 1a) Big data, smart data combinations
- 1b) Artificial intelligence (e.g. machine learning, data treatment, forecasting/trends, etc...), internet of things and block chain
- 1c) New technological developments (use of drones, smart sensors, participatory monitoring by smartphones / twitter, etc....)

2. Advances in assessment of risk and monitoring of soil, sediment and water quality

The investigation and assessment of soil, sediment and water quality, including risk assessment remains an important and always progressing theme. This theme focuses on contributions on the recent advances we have in sampling, monitoring techniques, risk assessment and methods to do this smarter, faster and cheaper.

Topics under this theme are:

- 2a) Advances in sampling, monitoring techniques and methods (e.g. molecular bio indicators, online monitoring tools, etc...)
- 2b) Analysis techniques (e.g. screening, non-target analysis, etc...)
- 2c) soil-sediment-water interaction and system dynamics
- 2d) Human and environmental health risk assessment

3. Diffuse and emerging contaminants in the soil-sediment-water system

Diffuse pollution and emerging contaminants such as PFOS, PFOA, pyrazole, GenX and antibiotics, endocrine disrupters, pathogens, pharmaceuticals and personal care products, pesticides are causing a lot of societal concern and could pose risks to human health and the environment. Also contaminants of emerging concern such as asbestos and lead are of interest in this theme. What are their effects on ecosystems and human health? How can we deal with them in a sensible way, knowing that data are still missing? What are differences in approaches in different countries?

Topics under this theme are:

- 3a) Sampling and analysis of diffuse and emerging contaminants
- 3b) Risk assessment and strategies for prioritization and monitoring of diffuse and emerging contaminants
- 3c) Reactive interfaces: unsaturated zone, sediments and groundwater
- 3d) Policy strategies and governance of diffuse and contaminants of emerging concern

Topics AquaConSoil 2019 (cont.)

4. Advances in remediation technologies

The advances in remediation technologies remain of high interest for AquaConSoil. This theme aims to exchange the progress in remediation technologies. New technologies, smart combinations to reach multiple (environmental and societal) goals, cheaper and more environmentally safe and friendly solutions and inspiring examples are welcome.

Topics under this theme are:

- 4a) Bio-, nano-, and chemical remediation
- 4b) Physical, thermal and stabilization techniques
- 4c) Combined treatment technologies and technology trains
- 4d) Phytoremediation and ecological engineering and nature based solutions
- 4e) Post-treatment monitoring in relation to long term site management

5. Strategies and management of contaminated land including legal, social and economic aspects

This theme has the objective to discuss strategies and management of contaminated land and brownfields. There are many barriers to start remediation or redevelopment and to bring these sites back into beneficial use. In many occasions the barriers are not just technical, but from legal and economic origin. How can these barriers be overcome and what are the drivers of change?

Topics under this theme are:

- 5a) Legal and economic aspects of the management of contaminated land
- 5b) Remediation goals and strategies
- 5c) Sustainability and socio-economic evaluation and public perception related to remediation, including societal participatory approaches
- 5d) Managing large scale industrial and agricultural pollution (water soil energy food nexus)

6. Land stewardship

Many land owners and users change their management perspective from problem solving to long term and sustainable management. The paradigm shift to sustainable land management needs specific emphasis on sustainable resource use of soil, sediment and water and halting land and soil degradation. The soil-sediment-water system delivers many services (food supply, soil energy, water regulation, space for human activity, etc.) that are of high value in a world where pressures increase due to global change (population dynamics, climate change, ...).

Topics under this theme are:

- 6a) Valuations of soil-sediment-water systems: natural capital accounting, ecosystem service assessment and socio-economic cost benefit analysis
- 6b) The role of soil, water and sediment in relation to societal challenges and UN Sustainable Development Goals
- 6c) Sustainable spatial planning of land and the subsurface, balancing rural-urban systems
- 6d) Public perception and behaviour in relation to soil and water

7. Land, soil, water and sediment in the circular economy

Resource demand is increasing as a result of the growing human population. In addition, the availability of resources is diminished due to unsustainable use in the past. As an economic system that focuses on maximizing the reuse of resources and products and minimizing their depreciation, the circular economy greatly influences and depends on the management of soil, sediment, water and land. Inspiring examples on how to reduce, reuse and recycle can help to make people aware of that role.

Topics under this theme are:

- 7a) Circular land use and brownfield regeneration
- 7b) Reuse and upgrading of soil, sediment and water and their products; recovery of valuable resources; improving ecological functioning
- 7c) Nature based solutions: effectiveness for long term ecosystem services for soil and water