NORDROCS 2018

7th Joint Nordic Meeting on Remediation of Contaminated Sites

Short course

Geostatistics
An overview of Geostatistics for contaminated site characterization

Time Monday September 3, 2018, 13.00 – 16.00 (excl. lunch)

Venue Konventum, Gl. Hellebækvej 70, 3000 Helsingør

Organised by
Hélène Demougeot-Renard, Manager and founder, eOde
Claire Faucheux, Consultant, Geovariances
Per Loll, Development- and Project Manager, DMR A/S

Subject
As you are involved in the characterization or the remediation of contaminated sites, you regularly face the following issues:

- How to extract the main information from the whole set of data in order to improve the contamination understanding?
- How to map contamination and which interpolation method is appropriate?
- How to precisely assess contaminated soil volumes or pollutant masses?
- How to quantify uncertainties related to the delineation of impacted areas, while integrating geological heterogeneities?

During the short course, you will understand why geostatistics provides relevant methods to address these issues and how they can be applied in operational settings. Methodological talks illustrated with practical examples on real cases involving various types of pollution: chemical or radiological, leak from a source, reworked fills, etc. These examples involve several environmental media: soil, sediment, facilities (concrete).

Program
Understand and assess the spatial heterogeneity of pollution:

- Presentation of the classical approaches implemented for characterizing potentially polluted sites and for predicting contaminated soil volumes, as well as assessing their compatibility for future use.
- Pros/Cons and underlying assumptions of these approaches.
- Practical introduction to the concepts of heterogeneity and spatial variability of pollutants. Operational consequences on the feasibility of given remediation techniques.
- Recommendation for the sampling of potentially polluted sites.

Predict and map in-situ pollution:

- Introduction to the kriging and its advantages, compared to deterministic methods (inverse distance, nearest neighbors): Integration of the spatial variability, quantification of the attached uncertainty.
- Taking into account auxiliary information: site history, qualitative observations and quantitative measurements.

Quantify and locate contaminated volumes or pollutant masses:

- Risks attached to the use of interpolation methods for estimating contaminated volumes or source pollutant masses.
- Practical introduction to stochastic simulations.
- Presentation of results: Global estimation of contaminated volumes and attached uncertainty, local risk of exceeding cleanup levels.

Registration
www.nordrocs.org

Changes may occur

NORDROCS 2018 is arranged by

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