



Improve contaminated site diagnosis and optimize remediation and decommissioning plans with geostatistics

Optimize sampling campaigns and save on costs.

Improve contamination characterization, whether chemical or radioactive.

Balance remediation efficiency and waste volumes and make the best decision.



CONTAMINATED SITES AND GROUNDWATER



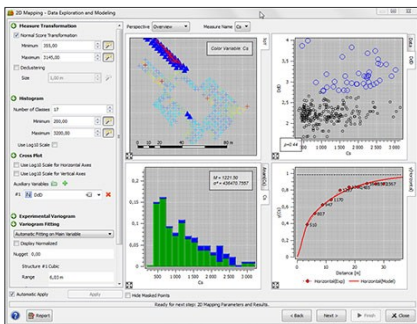
NUCLEAR DECOMMISSIONING AND
DISMANTLING

Geostatistics, what for?

Cleaning up sites polluted by chemical substances or decommissioning radio-contaminated facilities is a hard task. Thousands of industrial sites worldwide are or will face this problem, generating vast amounts of waste. A precise understanding of the contamination is crucial for effective remediation and avoiding weak management plans. Without it, there could be costly delays and waste overproduction during remediation.

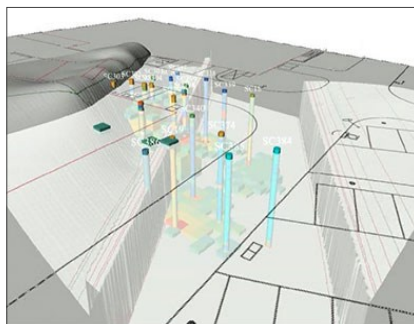
Why integrate geostatistics into your site diagnosis and management plans?

Geostatistics empowers environmental engineers, project managers and decision-makers with better site understanding and optimized sampling for improved remediation efficiency. It provides accurate and robust maps of the contamination, sound waste classification, and precise analyses of the cost-benefit ratio of projected remediation plans.



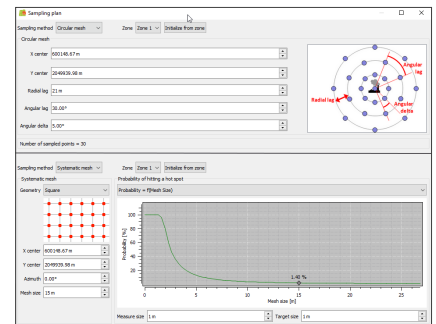
DATA INTEGRATION AND QUALITY CONTROL

Site characterization involves a wide range of information: historical data, indirect measurements, aerial views, topography, geology, physical models, ... Geostatistics integrates, explores, and cleans up this data, enhancing their quality and characterization reliability.



IMPROVED SPATIAL UNDERSTANDING

Geostatistics allows you to assess the heterogeneity and spatial variability of contaminants or pollutants in various matrices, including soil, groundwater, soil gas, and concrete, enhancing your understanding of how they evolve in space, both in 2D and 3D.



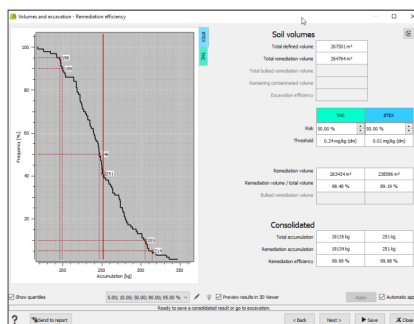
EFFICIENT SAMPLING

Geostatistical analysis helps optimize sampling strategies and measurement point positioning at every stage of a remediation or decommissioning project, during the preliminary characterization phase or to refine characterization. This way, you can save time and money while ensuring reliable results.



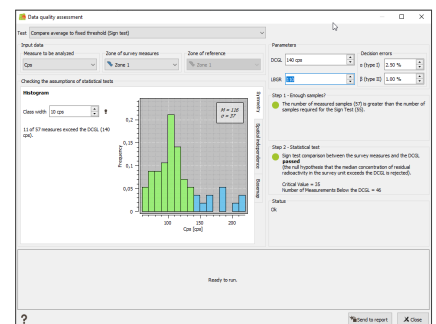
RELIABLE CONTAMINATION MAPPING AND DELINEATION

Geostatistics provides suitable methods for delivering robust and realistic maps of concentration levels. They come with uncertainty maps that help you identify undersampled areas and anticipate potential risks that may occur during remediation.



COST-EFFECTIVE REMEDIATION

Geostatistical simulations deliver probability maps of exceeding thresholds for contaminated volume estimation based on the risk of residual pollution. They assist in selecting appropriate operational thresholds through a precise cost-benefit analysis and categorizing waste for management optimization.



REGULATORY COMPLIANCE

Geostatistics can help ensure that your characterization efforts meet regulatory standards according to dedicated statistical tests such as Marssim and demonstrate the effectiveness of your remediation strategies.

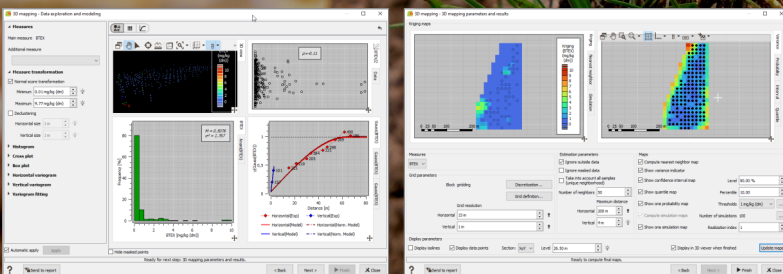
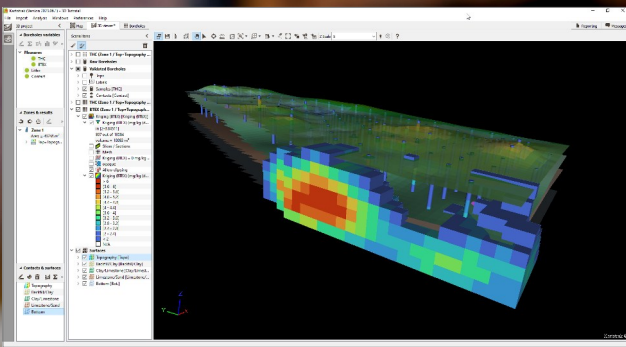
Our software solutions

For nearly four decades, Geovariances has been a leading global supplier of outstanding geostatistics software solutions and consulting, advisory, and training services.

Our aim is to help our customers improve their productivity and decision-making by supporting them in integrating geostatistics into their operational processes.



A software solution dedicated to
contamination characterization



The perfect combination of a Geographical Information System (2D) and a 3D viewer with a dedicated and integrated geostatistical engine that streamlines contamination characterization and enhances user efficiency and result reliability.

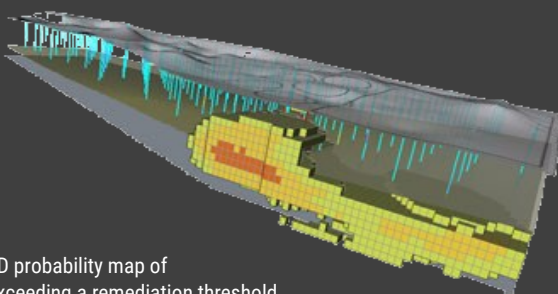
An end-to-end workflow covering sampling campaign preparation, data exploration and quality control, contamination mapping and hot-spot delineation, volume and mass estimation, contamination inventory, and excavation planning.

A unique post-processing for a precise cost-benefit analysis of site management plans based on various cut-off thresholds and risk tolerances on different waste categories and potential residual pollution.

An easy-to-use package for all project stakeholders, operators, engineers, project managers, and decision-makers to process data, visualize the global project in 3D and make risk-informed decisions.

You can no longer ignore uncertainties in your characterizations

Uncertainties are everywhere, in sampling, analyses, interpretations, estimations,... Geostatistical simulations, based on probabilistic analyses, allow them to be considered adequately. Instead of providing a single result - the reliability of which is even uncertain - they define a range of uncertainty with a minimum and maximum value, giving precious insights to decision-makers.



3D probability map of
exceeding a remediation threshold.

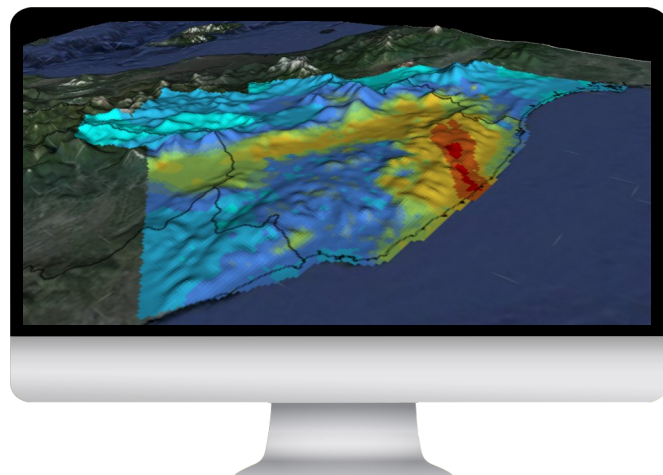
Kartotrak enables real-time acquisition of radiological contamination levels

Kartotrak can be connected to GPS and several measuring devices to monitor contaminated areas in real-time and record radiation measurements in the software database for immediate processing. This function is very beneficial for initial 2D mapping and determining sample locations, monitoring programs, and emergency situations.





For those who want **total flexibility** in software use, we offer **Isatis.neo**, a **premium and comprehensive geostatistics software solution** that gives access to the latest generation and the broadest range of functions for data analysis, visualization, mapping, modeling, uncertainty analysis, and risk assessment. It offers high performance with cutting-edge algorithms, batch processing, and Python scripting to build and automate customized routines.



Our consulting and training services



High-level consulting services

Our consultants are highly efficient and provide top-quality consulting services. They specialize in geostatistics for contamination characterization and site remediation projects. Their expertise and reputation as industry leaders make them well-equipped to understand your business and challenges. They regularly contribute to international conferences and professional journals.

Comprehensive training offer

Geovariances provides a comprehensive catalog of short courses tailored to your industry and specific operational challenges. They are designed to get a "hands-on experience" of the importance of key geostatistical concepts and rapidly develop valuable skills. They are conducted online or face-to-face in English or French.

Develop your skills in geostatistics with our short courses



An overview of geostatistics for contamination characterization.



Mapping and estimation of contaminated volumes using geostatistics.



2D mapping of radiological contaminations using geostatistics.



Contamination characterization with multivariate geostatistics and sampling optimization.

Get in touch now

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