



MINING SERVICES



O u r o f f e r

Training - Increase your resource evaluation skills

Geovariances offers a full suite of mining geostatistics courses available worldwide

- In-house sessions and workshops tailored to your specific requirements (basic to advanced)
- Courses focused on geostatistical concepts or on ISATIS software or both
- More than 300 people from 20 different countries successfully trained in the last two years

Mentoring - Deepen your knowledge on specific issues

Increase your proficiency in geostatistics through one-to-one sessions with one of our experts

- Receive practical guidance on appropriate and well-proven geostatistical approaches
- Develop your ISATIS skills, learn new functionalities and get the most out of ISATIS

Consulting - Benefit from renowned expertise

Geovariances consultants are experienced in all aspects of mineral estimation from exploration to mining and provide solutions tailored to your particular requirements

- Implement efficient estimation workflows and integrate ISATIS seamlessly with your other systems
- Quantify the benefit of improved resource estimation methodologies
- Help to identify the benefits of implementing ISATIS in your business
- Independent review of estimation processes and results
- More than 50 projects successfully achieved for mining companies and consulting offices over the last 2 years

Scientific Innovation - Going even further

Geovariances has privileged links with the "Centre de Géostatistique" of the Paris School of Mines. Together, we have the unique capacity to solve technical problems that need theoretical developments

- Research & development projects and consortiums
- Working parties and seminars focused on specific issues



How we can help you

Exploration/Pre-feasibility Stage because understanding the mineralization is vital to evaluate project potential.

Early assessment of the potential of an orebody requires a sound knowledge of the in-situ resource: over or under-estimating the resource may have substantial financial consequences.

Geovariances consultants can help you develop greater orebody knowledge and benefit from an accurate resource model by:

- Providing data analysis tools for identifying directions of maximum grade continuity and better understanding small scale variability.
- Maximizing the value of all available data with multivariate data analysis to integrate different variables such as different sample types.
- Optimizing drill hole spacing.
- Tuning your kriging parameters to ensure unbiased resource models.

Feasibility Stage because knowing the technical and economic viability of the orebody is crucial.

There is a lot of pressure during the feasibility stage to produce realistic estimates of grade and tonnage. Mining and processing studies require the grade and distribution of small blocks yet typically only wide spaced data is available.

Geovariances consultants have extensive experience in dealing with these issues.

Evaluate the optimal size of your mining blocks

The choice of the mining block (SMU) size is crucial to the performance of a mine.

Geovariances has extensive experience in change of support modeling to evaluate sensitivity to block size. We help you choose the one that best meets your specific requirements.

Quantify the risks associated with your project

As an input to Mine planning and to help quantify the financial risks associated with your project, we help you apply Conditional Simulation techniques to assess the variability of the Resource and the associated probability.

Base your mine plan on the best possible Resource evaluation

Applying a cut-off to classically estimated (kriged) mining

blocks with wide-spaced drillholes leads to biased grade-tonnage estimates, with potentially serious financial consequences.

An accurate and unbiased assessment of small mining blocks (SMU's) above cut-off is required in order to confidently plan production and design pits that maximize the cash flow during the financially critical early years.

We help you to choose and apply appropriate non-linear geostatistics, including support/information effect, for estimating recoverable resources.

Production Stage because appropriate grade reconciliation and plant recovery are essential.

Supporting efficient grade control

For short term mine planning it is vital to estimate without bias the grades of individual mining blocks or stopes to properly process the ore and maximize the potential of your operation.

Define an optimal production sampling pattern

Optimize grade control sampling with geostatistical simulations.

Quantify and integrate the grade variability at the plant

Short term mill feed variability can have a large impact on mill performance. We help you meet your mill feed variability targets through increased understanding of in-situ grade variability and conditional simulations to support stockpiling and blending decisions.

Our people

Geovariances has developed a professional expertise confirmed by more than 20 years of experience in the mining field.

Our consultants are highly qualified, experienced, versatile and fully committed to supporting your company's needs

- A team of geologists, mining engineers and geostatisticians with worldwide mining experience
- Regular contributions to international industry and academic conferences and journals
- Responsible for implementation of many significant technical advances over the past 20 years
- Several JORC Competent Persons in the reporting of Resources for various styles of gold, uranium, copper mineralization, etc.