

Transferring sampling errors into geostatistical modelling

Cuba, M.

Leuangthong, O.

Ortiz, J.

Geostatistical modelling aims at providing unbiased estimates of the grades of elements of economic interest in mining operations, and assessing the associated uncertainty in these resources and reserves. Conventional practice consists of using the data as errorfree values and performing the typical steps of data analysis - domaining, semivariogram analysis, and estimation/simulation. However, in many mature deposits, information comes from different drilling campaigns that were sometimes completed decades ago, when little or no quality assurance and quality control (QA/QC) procedures were available. Although this legacy data may have significant sampling errors, it provides valuable information and should be combined with more recent data that has been subject to strict QA/QC procedures. In this paper we show that ignoring the errors associated with sample data considerably underestimates the uncertainty (and consequently the economic risk) associated with a mining project. We also pr