

Complex Orebodies Conference 2018

Paper Number: 23

Sensitive dependence on initial conditions in resource estimation

*D J Kentwell*¹

1.
Principal, SRK Consulting, Melbourne 3000. FAusIMM

ABSTRACT

This extended abstract and associated presentation provide a series of real examples of the complex interactions between the numerous input parameters, both geological and mathematical, that are required for resource estimation. Many of these parameters can contain a large degree of uncertainty at the initial resource stage. The resource tonnages and grades at economic cut offs of some types of deposits are relatively robust to these initial uncertainties while others exhibit significant sensitivity. In some cases, changes in parameters can result in counter-intuitive outcomes. Grades and confidence levels are inseparable; as the parameters change the confidence changes and so does the grade estimate. The extended abstract and associated presentation also discuss the question of whether or not a single solution is still an acceptable outcome for an estimate or if even a set of simulations based on a single fixed set of parameters is acceptable.