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Surface Interpolation with missing data SCE Method

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SCE:

Soft Constraint Estimator

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Context

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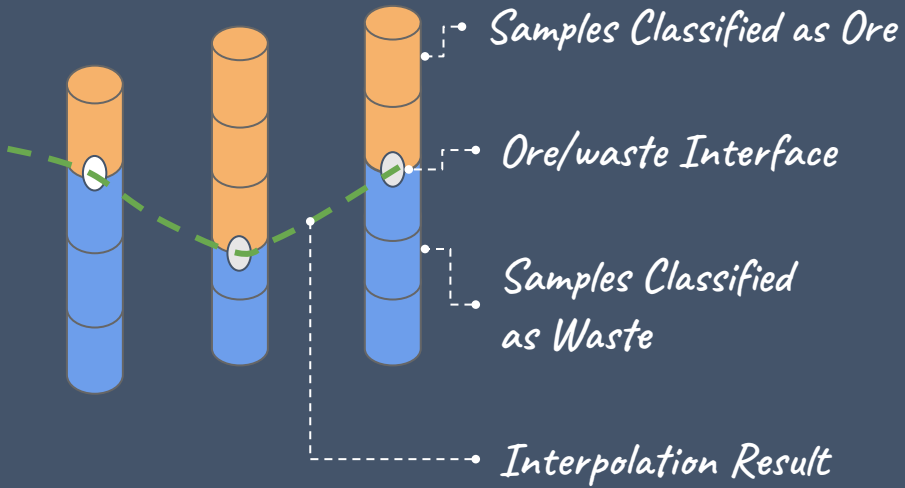
Standard Configuration



Surfaces are usually estimated from contacts

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Data quality can, however, be a problem

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Complex Configuration

Complex configurations add risk and uncertainties to the estimation

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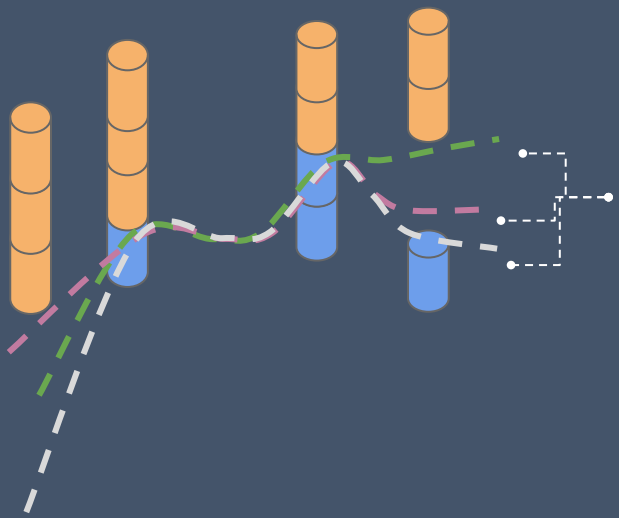
Complex Configuration



Missing information increases the uncertainty over the models

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Complex Configuration

Hard Constraint:
The location of the interface is known

Soft Constraint
(or inequality constraint)

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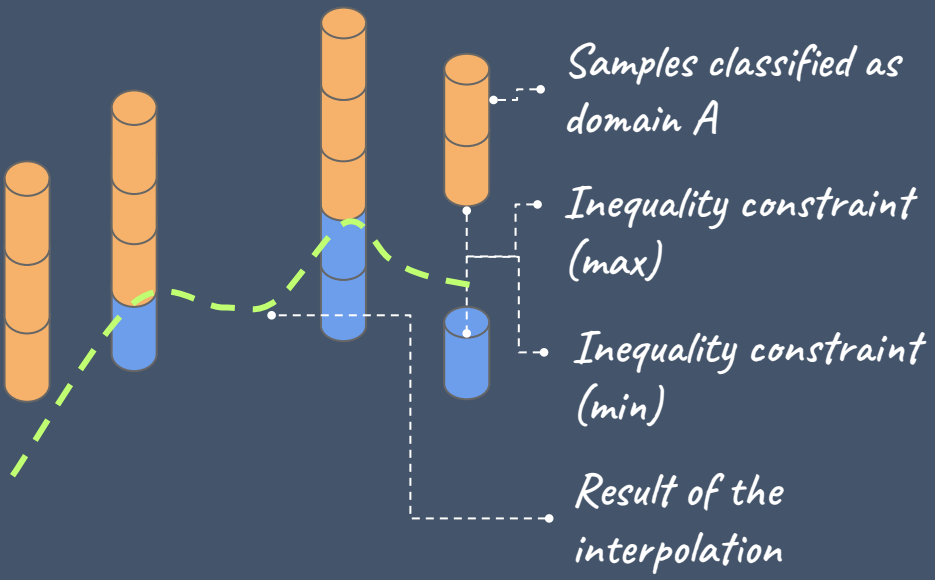
Complex Configuration



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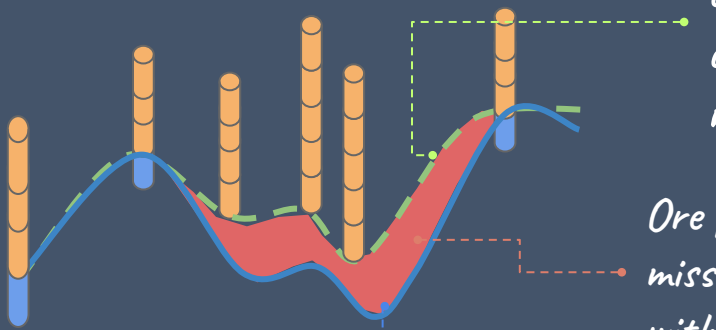
Under Identified Material



Under identified material is a common situation

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Some existing approaches in the mineral industry

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Common Approaches

➔ Use the data as is,
and cross your finger

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Common Approaches

➔ Send the data back to the logging team

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Common Approaches

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Common Approaches

*Probably with Excel 2010

➔ Spend days, weeks, or months of manual edition, to interpret manually the interface location

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What's the problem?

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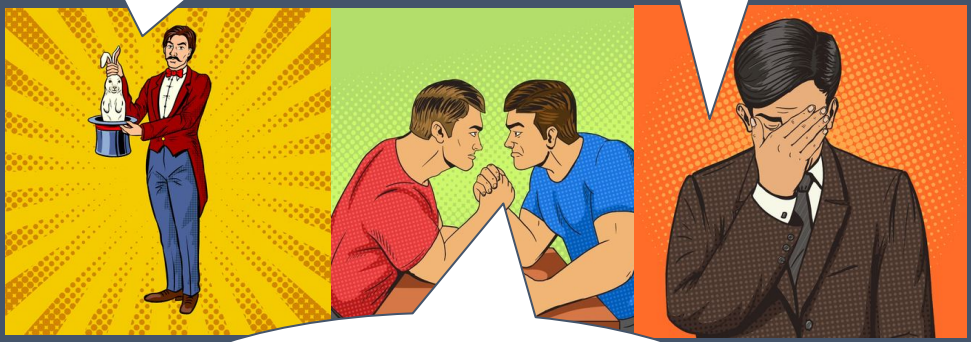
Uncertain information is used as hard data

Work might not be reproducible and is painful to update



Each geologist will generate a different geological model

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SCE Method

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Use a method that **interpolates** the surfaces from **hard data** and **soft constraints**

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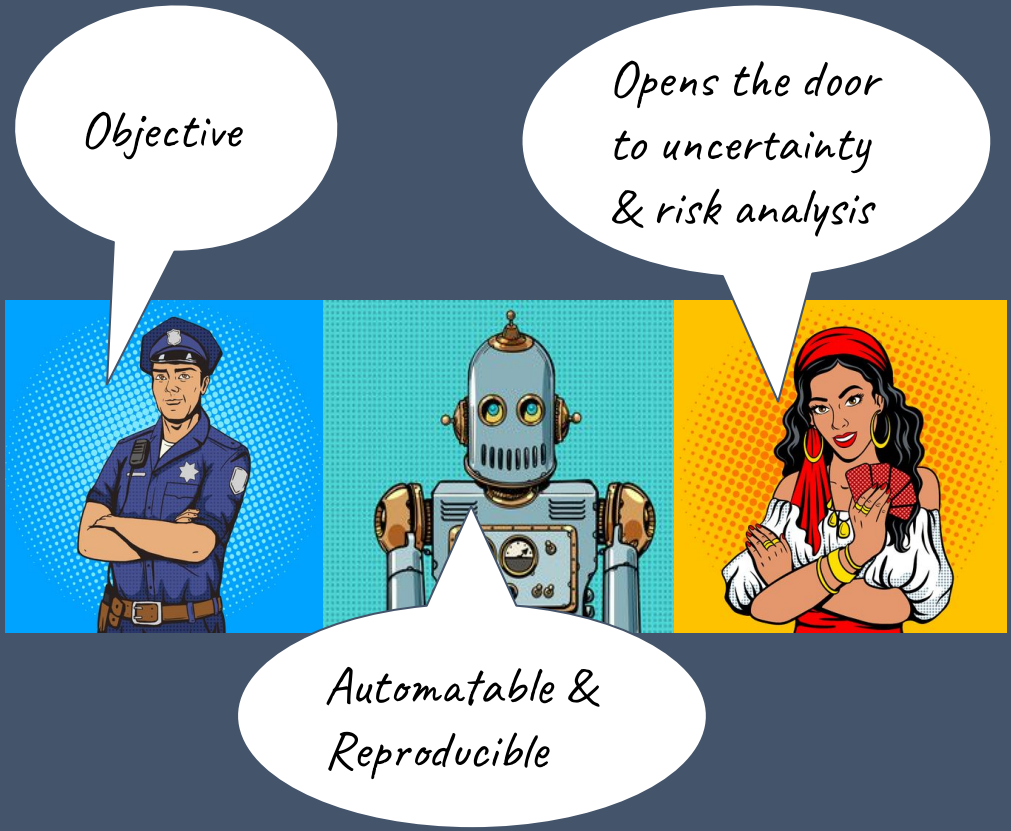
Objective
Opens the door to uncertainty & risk analysis
Automatable & Reproducible

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The SCE Method:

- ➔ Works with any interpolators (RBF, IDW, Simulation, Kriging ...)
- ➔ Always respects the full data-set
- ➔ Reduces the volume bias compared to standard methods
- ➔ Compatible with uncertainty assessment

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Why uncertainty and risk analysis in resource estimation:

- ➔ Improve resource classification
- ➔ Improve decision-making and resource management
- ➔ Improve communication and reduce risk

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How to get hands-on?

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Want to see more about:

- *How to get a training on uncertainty?*
- *How to estimate uncertainty in surface modelling?*
- *How does GeoLime speed up geomodeling?*
- *How to get a proof of concept on our data?*

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