

GEOSTATISTICS & MACHINE LEARNING APPLIED TO LIBS GEOCHEMICAL DATA

PHD PROJECT

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RESEARCH PROJECT

This project will develop methods to provide quantitative chemistry for Cu and an associated suite of elements from LIBS spectra with a sampling strategy to improve element predictions.

The key question: "Can downhole laser induced breakdown spectroscopy (LIBS) be used for rapid and accurate prediction of elements related to Cu mineralisation?" will be addressed with three objectives:

1. Develop multi-element calibration models for LIBS spectra to predict elements related to Cu mineralisation.
2. Develop a workflow to systematically collect samples and robustly estimate quantitative multi-element concentrations comparable to the volumetric whole rock assay.
3. Develop a workflow to generate inferred mineralogical data from quantified LIBS analysis.