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TITULO DE LA PONENCIA

Estimation of emerald mineralization probability using machine learning algorithms / Estimación de la probabilidad de mineralización de esmeraldas usando algoritmos de aprendizaje automático

AUTORES

Daniela Neva-Rodríguez, Luis Hernán Ochoa-Gutierrez

INSTITUCIÓN

Universidad Nacional de Colombia

CORREO ELECTRÓNICO

dnevar@unal.edu.co

Estilo preferido

ESTILO DE PRESENTACIÓN

- Poster

Categoría del resumen

ÁREA TEMÁTICA

Inteligencia Artificial

LINEAS TEMÁTICAS AI

Machine Learning

Resumen

PALABRAS CLAVE

gems, calibration, drillhole, mineral target (en)

CONTENIDO DEL RESUMEN

This research proposes a machine learning (ML) model that estimates the probability of emerald mineralization in rocks of the Western Emerald Belt (CEOC). Element concentrations, lithologies and coordinates were used as input variables and productivity as the target variable (176 samples). The variables were transformed to be integrated into the model. (1) Variable selection was performed using the Boruta method and backward elimination. (2) A logistic regression, a neural network, and a support vector machine were trained. (3) Calibration was achieved with the Platt method. (4) Calibration assessment was conducted by using the Brier score and

calibration curves. The model selected was a calibrated support vector machine (C = 0.19 and λ = 0.1) that included 17 geochemical variables and the coordinates. The results were presented in a 3D plot. Assigning a probability value to each sample allows the mining targets to be ranked.