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A study on internal dilution in the orapa 2125 A/K1 kimberlite based on 2D quantitative textural analysis data

Chiomba, Tapuwa Brian

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ABSTRACT

The country rock xenoliths in diamondiferous kimberlites represent internal dilution of kimberlitic ore which must be properly evaluated ahead of mining. Internal dilution in the Orapa 2125 A/K1 kimberlite in Botswana was evaluated on the basis of data collected from drillcore using a stereology based methodology. The methodology was scrutinized for flaws that could negatively impact the usability of the data. The methodology's data didn't reflect the true internal dilution abundances in the kimberlite specimens. Statistical tests showed that varying some key features of the methodology produced differential effects on accuracy of measurements for some kimberlite lithofacies but not for others. Nonetheless, the data gave valuable insights into the relative abundances and attributes of internal dilution in different kimberlite lithofacies from the A/K1 kimberlite.