



Comparison of Kriging and coKriging for soil contamination mapping in abandoned mine sites

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Soil contamination mapping around abandoned mines is an important task for the planning and design of mine reclamation. This study compared the ordinary Kriging and the co-Kriging methods for the soil contamination mapping in abandoned mine sites. Four approaches were conducted as follows: (1) soil contamination mapping using the ordinary Kriging and Inductively Coupled Plasma (ICP) data only; (2) soil contamination mapping using the ordinary Kriging and Portable X-Ray Fluorescence (PXRF) data only; (3) soil contamination mapping using the ordinary Kriging and integrated data from ICP and PXRF; and (4) soil contamination mapping using the co-Kriging and integrated data from ICP and PXRF. Results indicate that the approach 3 provides substantial improvements over other three approaches including a more reasonable spatial pattern of soil contamination and reduction in the error of its estimates.