

Geological models of diamond concentration in Calonda Formation (Angola) improved with geostatistical tools

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In NE Angola the Calonda Formation is the first sedimentary collector of diamonds after the supergenic destruction of kimberlites. The scantiness of outcrops and the generally high overburden thickness are serious problems for exploration of Calonda gravels, specifically for the establishment of geological models for sedimentation and diamond concentration. But the overburden thickness is also the reason why this unit is untouchable by the illicit diamond searchers. In the future this should pay a major attention to the Calonda Formation.

The use of sedimentological parameters to develop geological models of ore concentration is difficult to use because the lacking of outcrops as well because of the destructive drilling. However the drilling data provide several parameters fundamental in the evaluation of economical potential, that could be used to establish those models.

Based in multivariate statistical analysis (Principal Component Analysis) multidimensional relations between different variables are established. With geostatistic methods (kriging) several geological levels are defined, trying to integrate the results with geological models of sedimentation and ore concentration.