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Trace Element Compositions of Placer Gold Samples: Implication for Gold Exploration in Northern Cameroon

Authors : Yanick Blaise Ketchaya, Taofa Zhou

Abstract : The type of primary source of gold deposit can be explored by using the study of trace element analysis of placer gold which is a valuable exploration tool. Au-bearing deposits are investigated through the placer gold, which is an important indicator mineral. The hydrothermal fluid interacting with diverse geological settings exerts an important function on the chemical composition of gold. Consequently, alluvial gold particles from the placer deposits within the Gamba district in northern Cameroon were examined by an electron probe microanalyzer (EPMA) to show discriminant chemical signatures. The gold grains from a different locality show the same trace element composition, which appears to be in a solid solution in Au. These trace element compositions, contained in gold grains, indicate a homogeneous source. The placer gold particles have significant chemical characteristics (low Ag content), consistent with a mesothermal source. The gold particle signatures in the Gamba district, with high Te and Bi contents, reflect the chemical characteristics of the felsic host rock superimposed on the chemical signature of the hydrothermal fluid.

Keywords : hypogene source, Northern Cameroon, placer gold, trace element
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