

## **VARIOGRAPHIC TRENDS OF GOLD DISTRIBUTION IN THE ALLUVIAL SEDIMENTS ASSOCIATED WITH THE QUARTZ LODES OF THE PRINCESA ISABEL REGION, PARAIBA, BRAZIL.**

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The gold occurs in the quartz lodes which occur with in the Upper Precambrian meta-sedimentary formations. The metal is being currently explored in the region and large scale geochemical prospecction was done by CDRM/PB to discover the new additional deposits. Wide spread sampling of the soil and sediments associated with the gold deposits of the region yielded large amount of data about the gold concentration. The objective of this study is to verify the nature of distribution of the metal in the sediments and its behavior and to come with a model showing the systematics in their distribution of the gold. A total of 129 samples were collected and the gold assay in the sediments vary from 0 to 184.71 ppb and has an average of 9.44 ppb with a variance of 841.49. The coefficient of variation tend to be around 3.07 and show pronounced log-normal distribution. The sediment assay values were used to develop variograms to detect the structure in gold distribution. The average variogram did not show a good structure, however, directional one came up with a good structure with a range of influence of 7m. This variogram shows hole effect with vertically oscillating curve showing effects of irregular sedimentation patterns and gold occurrence. Effect of elimination of extreme assays were investigated. The sediments associated with each lode were grouped to separate the structures from average variogram. This resulted in meaningful structures showing the influence of lodes on the gold distribution patterns in the sediments.