

A GEOPROCESSING APPLICATION IN GOLD PROSPECTING IN PINHEIROS ALTOS, MINAS GERAIS, BRAZIL

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This work shows the use of techniques of integration, manipulation and spatial analysis of geological data aiming the selection of potential areas for gold prospecting based on a prospective model. The Pinheiros Altos region of Minas Gerais, Brazil, with an area of 51.33 km² is located on the southeastern border of the São Francisco Craton, and is related to a vulcano-sedimentary sequence and granitoid bodies with Archean ages. The geochemistry data used in the investigation were sampling of heavy mineral along the stream water, collected during field campaigns carried out in the period of April to July 1996. The samples were chemically analysed based on atomic absorption. The chemical data were crossed with geological data using a Boolean algebra operation, and a Gold Potentiality Map was obtained. This map has shown an interesting relationship, given by a trend of gold values (higher than 9 ppm) and the spatial location of thrust faults, and abandoned gold mines. In addition, it was also possible to indicate new sites in the area, which present high potential for new mineralizations. These findings have confirmed the importance of using Geographical Information Systems technology as an effective tool for mineral exploration, particularly when dealing with prospective model generation.