

DIGITAL IMAGE PROCESSING APPLIED TO MINERAL EXPLORATION EXPLORATION IN THE PARANOÁ GROUP - BRASIL

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As part of a mineral exploration campaign at the Paranoá Group (Brasília Fold Belt, Brazil) we investigated the relationships between Landsat imagery, airborne geophysical data and geological data using ER Mapper software. The aim of this work was to characterise the surficial materials (including some bedrock units related to economic mineralization), with respect to the above data types, in order to identify similar units in poorly known areas. The first step in the characterisation involved establishing training sites in representative areas of carbonates, shales, mafic and ultramafic complexes. For each training site, the following data sets were captured: TM bands 1–7, aeromagnetic, radiometric, and bedrock lithology. When data for each variable were compared, there was generally a strong overlap in the signatures for each surficial unit, but, in most cases, units could be distinguished based on the signature of at least one variable. The intersection of all of these variables showed the better prospects for mineral exploration.