

ANALYSIS OF REMOTE SENSING AND AIRBORNE GEOPHYSICAL DATA BY USING FUZZY CLASSIFICATION AND PRINCIPAL COMPONENT ANALYSIS. A CASE STUDY OF SAR CHESHMEH POEPHYRY COPPER MINE, IRAN

F. Masoumi, H. Ranjbar,

Faizullah Masoomi(masoumi@graduate.uk.ac.ir) and Hojjatollah Ranjbar(h.ranjbar@mail.uk.ac.ir)
Department of Mining Engineering, Shahid Bahonar University of Kerman, Kerman Iran.

ABSTRACT:

Sar Cheshmeh porphyry copper deposit is located in Central Iranian Volcanic-Sedimentary Belt(CIVSB). The alteration zones are well developed within and around the porphyry stock. Remote sensing (ASTER and ETM data) and airborne magnetic, radiometric and electromagnetic data used for testing and comparing such data for alteration and mineralization detection. Principal component analysis is used for mapping the altered areas by remote sensing, and fuzzy classification and principal components analysis are applied on geophysical data. The overall results showed that remote sensing data is more accurate in terms of alteration detection, but geophysical data(especially electromagnetic data) can detect the mineralized zone with more accuracy.