



## Chapter 9

# Regional Integrated Structural and Alteration Analysis of Magnetic and Infrared Remote Sensing Data from the Kerman Belt, Iran

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### Abstract

A method is presented for integrating structural and alteration interpretations based on regional remote sensing magnetic and infrared spectral data. Integrated interpretations can provide insight about the controls that basement structural architecture exerts over porphyry mineralization. The method is illustrated by a study of the porphyry-endowed Kerman belt of Iran, for which structural interpretations of EMAG2 first vertical derivative magnetic data were refined using alteration lineaments interpreted from Landsat-8 infrared spectral data. This method makes use of regional linear alteration trends indicative of lithologic discontinuities to refine and to enhance the understanding of deep-seated structures interpreted from regional magnetic data. The integrated structural and alteration analysis of the Kerman belt of Iran highlights a first-order fault that is interpreted continuously at depth over approximately 500 km strike length and shows good spatial correlation with the location of most porphyry deposits and prospects. The analysis also allows for the visualization of a premineralization regional dilational zone that hosts the most prolific portion of the Kerman porphyry belt.

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