

Gold - Sulphide Mineralization in Granite Complex of Jashpur, Bastar Craton, Central India: Evidences from Geophysical Studies

Time Domain Induced Polarization (TDIP) and high resolution 2D (X-Z direction) electrical resistivity survey were carried out at seven sites along a 5.2 km line in Jashpur and Raigarh districts of Chhattisgarh State. The study area comprises of laterites, metasediments and granite-gneiss with intrusive complexes of gabbro-pyroxenite-granite sequences, hosting gold - sulphide mineralization. Our studies reveal a good correlation between 2D inverted resistivity and time domain Induced Polarization (IP) sections in depths. Both high resistivity-high chargeability as well as low resistivity-high chargeability conditions have been inferred from these datasets, which is consistent with conductive metallic mineralization. Interpretation of the Pharsababar-Pandripani sites reveals a chargeability magnitude of 9-14 mV/V, which represents a strong metallic conductor, associated with a known gold-sulphide ore body within the subsurface. The results at Samarkachar site are equally significant, showing a good correlation with the presence of a low resistivity and high chargeability zone. The present study suggests a new and efficient application of resistivity and IP integrated surveys for prospecting of metallic sulphide mineralization including the concealed gold-sulphide deposit(s) in the favourable geological settings.

For Further Details:

Dewashish Kumar, D.V.Subba Rao, Setbandhu Mondal, K.Sridhar, K.Rajesh and M.Satyanarayanan, August, 2017. Gold - Sulphide Mineralization in Ultramafic-Mafic-Granite Complex of Jashpur, Bastar Craton, Central India: Evidences from Geophysical Studies, Journal of the Geological Society of India, Springer Publication, Vol. 90, No.2,147-153, DOI: 10.1007/s12594-017-0692-x, August, 2017,

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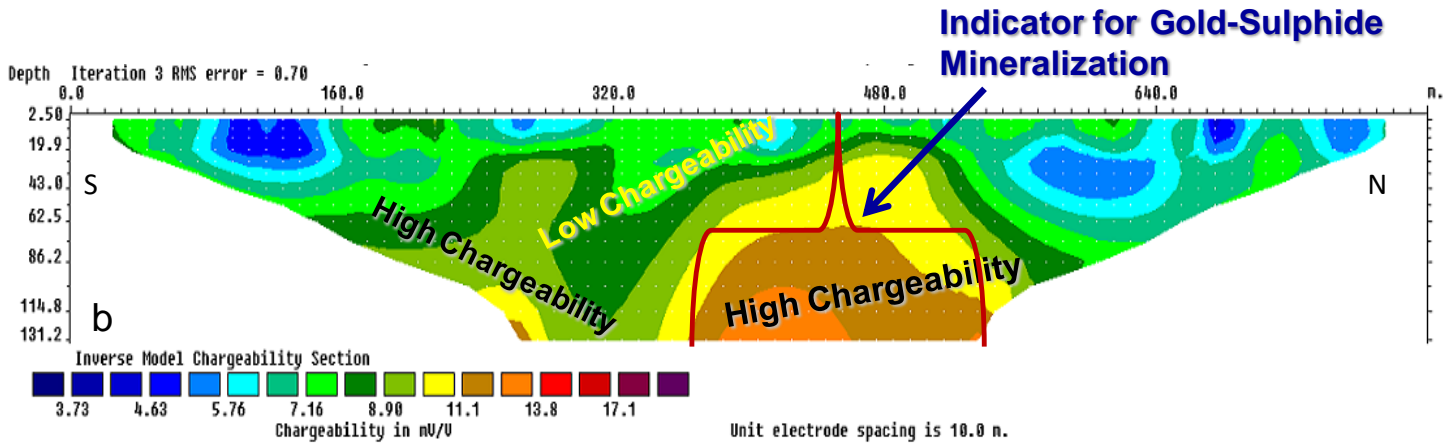
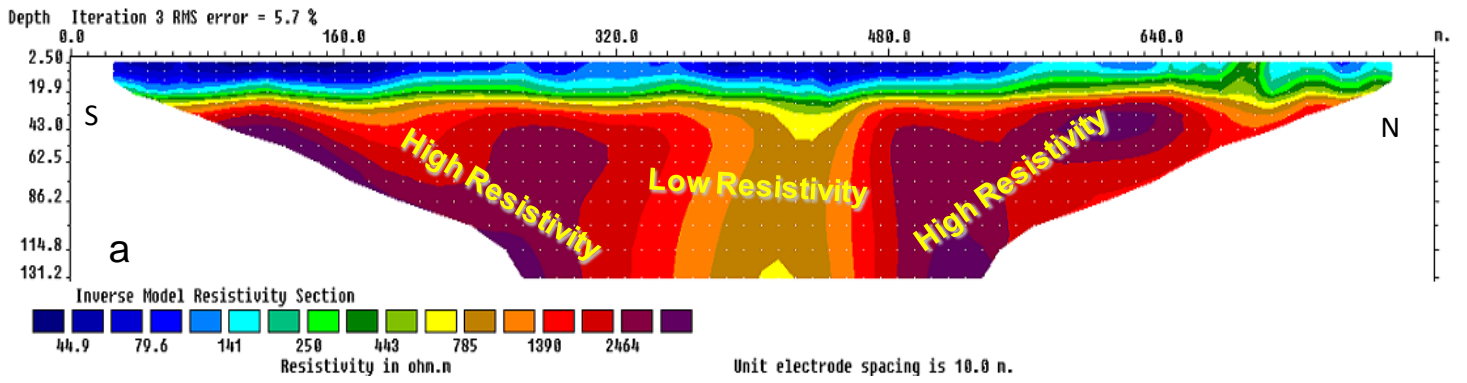


Figure: (a) shows the 2D inverted resistivity model with two high resistivity body separated by a low resistivity zone showing resistivity contrast of ≥ 1000 Ohm.m, **b.** chargeability model shows a large volume of rock mass with high chargeability value right from the center to northern side in the section and a low chargeability over the high anomaly at Pharsabahar site.