

Magnetic properties & structural characteristics of the gold-bearing granite at Koupéla, Central-Estern Burkina Faso (West African Craton)

Boniface KOURAOGO, Sâga SAWADOGO, Benjamin SAWADOGO, WP Pauline ZONGO

Joseph KI-ZERBO University - Geosciences & Environnement Laboratory (LaGE)/ bonifacekouraogo@gmail.com / Tel : +226 77 87 51 81

Abstract

The relationships between petro-structural characteristics, geodynamic context and metallogenic potential of Koupéla Granite Pluton (KGP) remain insufficiently documented. This study combines field geological mapping, systematic sampling, petrographic analyses, whole-rock and electron probe geochemistry, and anisotropy of magnetic susceptibility (AMS) measurements. Results reveal a lithological diversity dominated by calc-alkaline granitoids, affected by ductile to brittle deformations, that reflects a multi-phase tectonic evolution.

1 Introduction

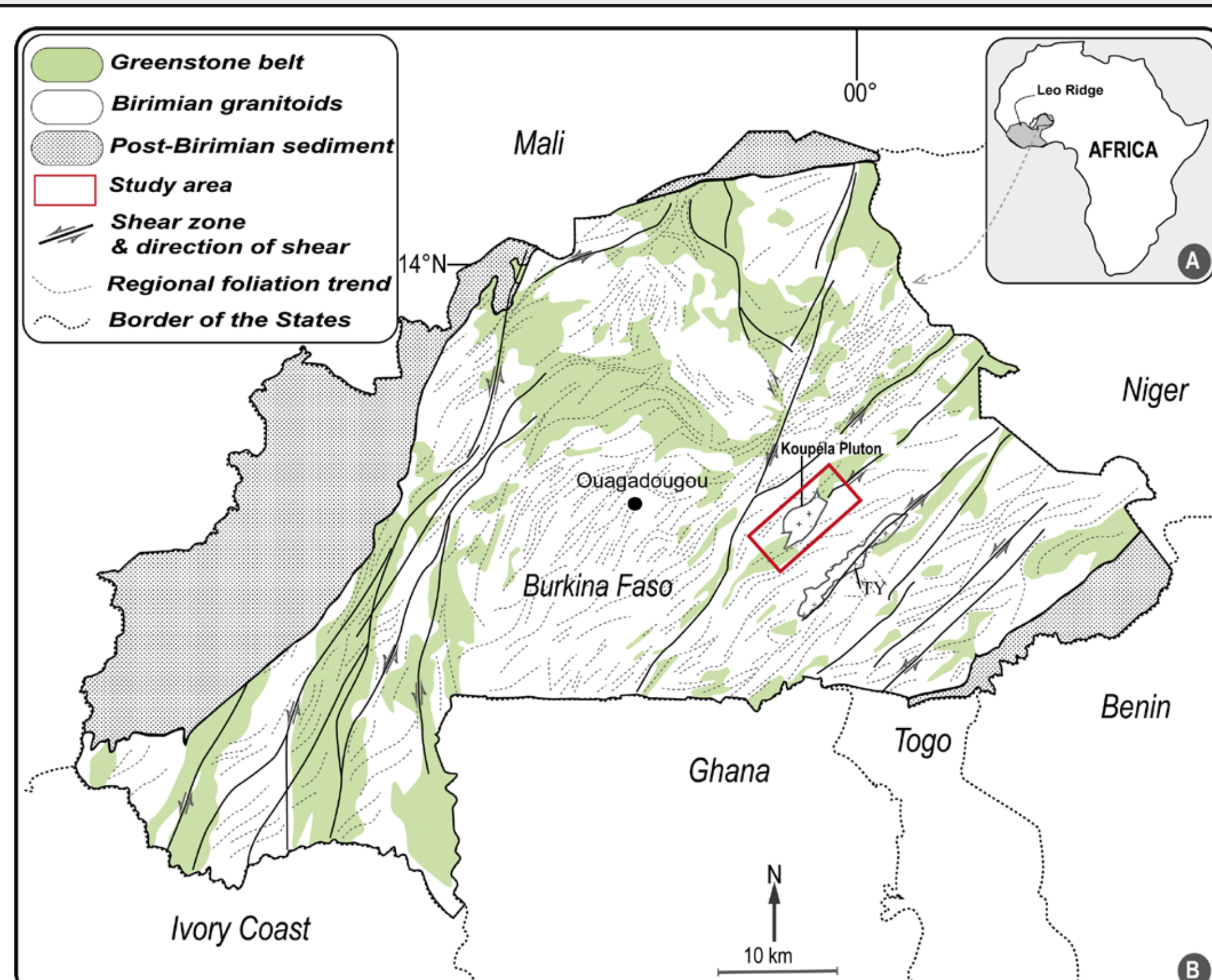
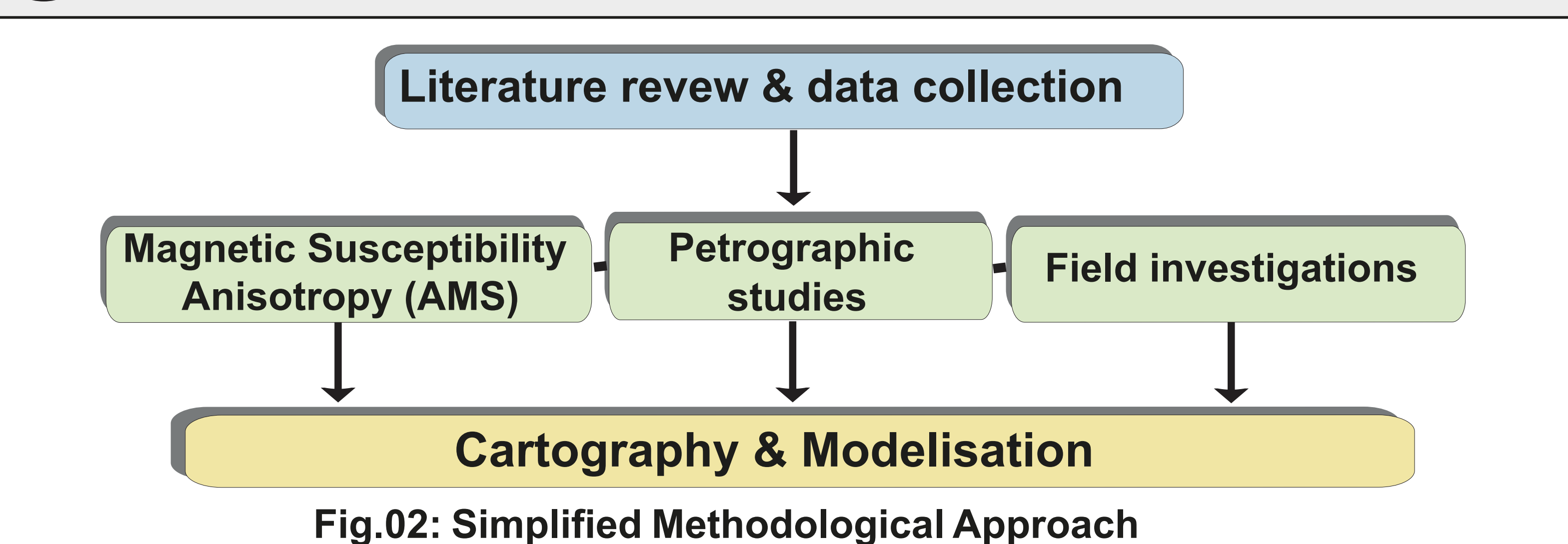


Fig.01: Simplified Geological Map of Burkina Faso. The Koupéla Pluton (red-box) intrude the Birimian greenstone granitoid domaine of the eastern WAC, framed by NE-SW regional shear corridors that controlled magma ascent and later gold-bearing fluid circulation.

2 Methodology



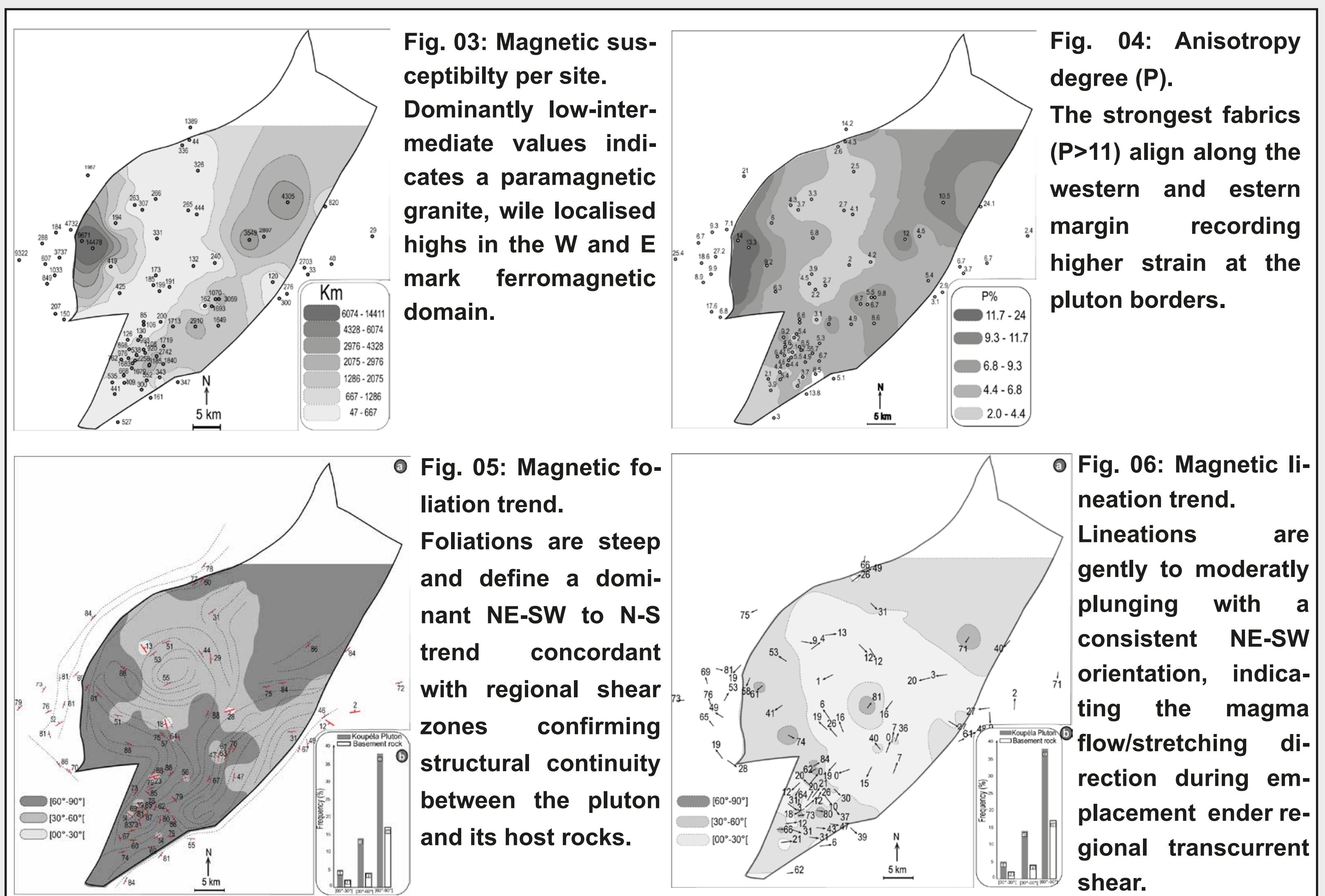
6 Conclusion

This study demonstrates the value of a multi-source, multi-scale approach to analysing the internal structure of the Birimian plutonic formations. It contributes to our understanding of regional geodynamic processes and provides practical guidance for identifying areas suitable for mineral exploration in central-eastern Burkina Faso.

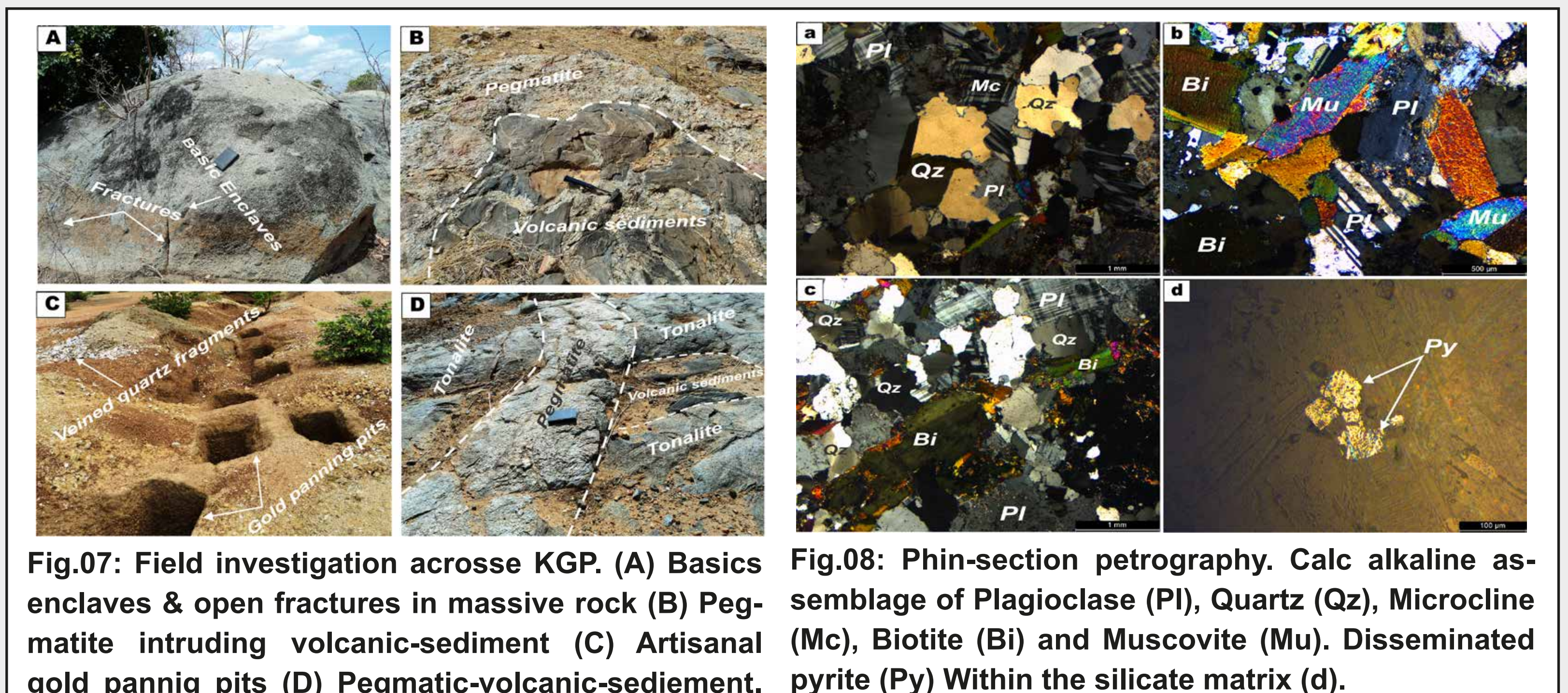
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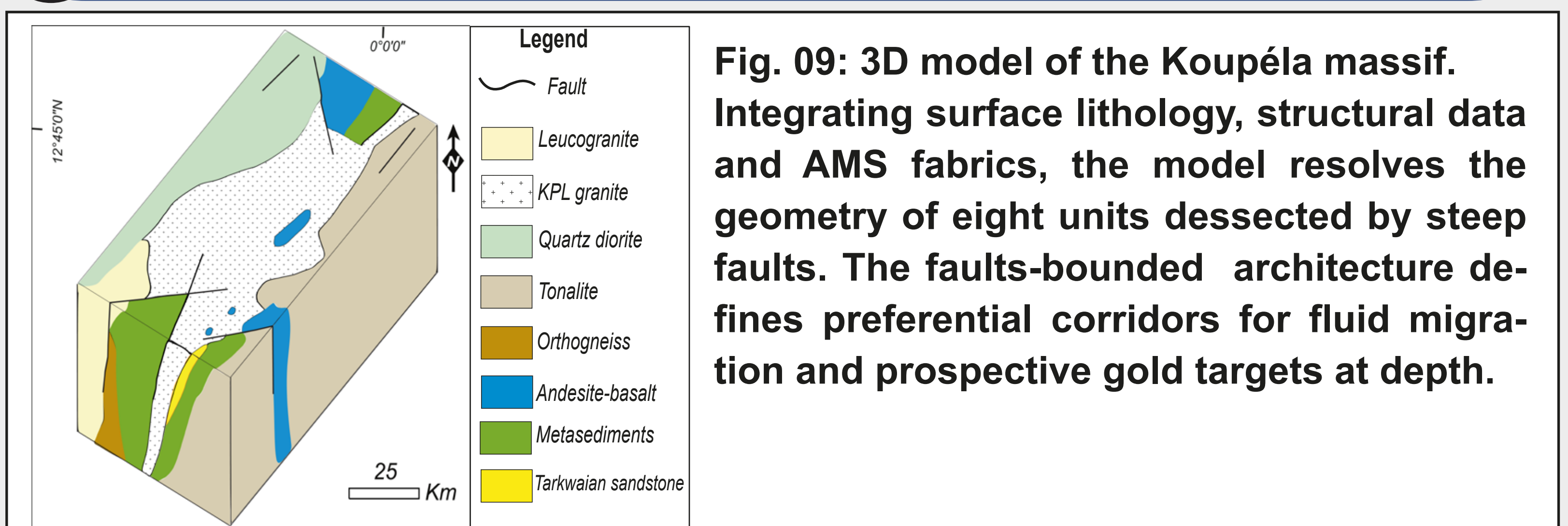
3 Results-AMS Mapping



4 Field & petrography



5 3D model



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