# Chapter 8
# Conclusions

Based on the geophysical interpretation, the Loei area is divided into three magnetic domains; eastern, central and western domains. The eastern domain is represented by mainly high magnetic intensities with major strike-slip faults and small folds, indicating to an accretionary prism and mélange. The central domain consists of low magnetic intensities, thrust faults, large open synclinal fold and small tight anticlinal folds, regarding marine basin, and younger granitic intrusion exposed or at depth. The western domain contains the large and prominent circular features with moderate magnetic intensities and north-trending lineaments, suggesting arc and orogenic volcanism and younger volcanic cover further to the west.

Three main suites of the magnetic lineaments are identified including northeast, northwest and north trending features. In the central domain, the northwest-trending lineaments are cross-cut by the northeast-trending lineaments. This clearly indicates that the northeast-trending lineaments are younger than those of the northwest trends. Additionally, the northwest-trending lineaments in the central domain represent as major thrust faults. The north-trending lineaments in the eastern part of the area are regarded as major strike-slip faults. The northeast trending lineaments in all domains cross-cut and sometimes offset orogenic structures, corresponding to relaxation after collision or distant tectonic stress.

Geophysical interpretation and modeling delineated new tectonic domains, 3D geometry of large magnetic bodies, major faults and folds, and younger northeast cross-faults. Moreover, geophysical interpretation provided continuity of geological features below Cenozoic sediments, regolith covers and rice fields. New faults and buried intrusions were identified along with serpentinite in the mélange belt.

Interpretation tends to be useful for studying anomaly composition and Paleotectonic units in the future. The crust in the Loei area formed by an island arc setting developed in the Paleozoic, and arc-continent collision in the Permo-Triassic.

Based on our magnetic domains and lineaments, mineral occurrences seem to cluster in some domain and along structure. Three suitable areas should be target for further mineral exploration.



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